DOCTORAL THESIS

Development of a triple bottom line stakeholder satisfaction model

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Award date:
2016

Development of a Triple Bottom Line Stakeholder Satisfaction Model

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Submitted in total fulfilment of the requirements of the
Degree of Doctor of Philosophy October 2015

Declaration

This thesis is submitted to Bond University in fulfilment of the requirements of the degree of Doctor of Philosophy. This thesis represents my own original work towards this research degree and contains no material which has been previously submitted for a degree or diploma at this University or any other institution, except where due acknowledgement is made.

23/10/ 2015

Burhan Amarah Date

Abstract

Sustainable development is a goal of modern society, and to a large extent it is governed by the actions of business organisations in trying to improve value to their stakeholders. Enlightened businesses know that 'stakeholder' does not equal 'shareholder', and there is more to value than financial returns and profits. Social and environmental value is also important. Using a triple bottom line philosophy, it is possible to strike an effective balance between economic, social and environmental objectives to release outcomes that are sustainable in the wider sense. To date, the quantification of these outcomes as a single decision metric has been problematic, given there is no common unit to integrate performance.

This thesis combines a review of underpinning literature on the relationship between sustainable development and stakeholder satisfaction with an explanation of quantification models and a detailed case study of a stakeholder-driver approach to the procurement of sustainable built infrastructure for Energex in Brisbane. Using grounded theory, a conceptual framework is developed from these sources to not only integrate the various stakeholder perspectives of sustainability success, but to also measure this success in an objective way. The framework is a six-point star rating scheme to assess stakeholder satisfaction in terms of economic, social and environmental criteria to measure organisational decision-making performance.

This framework is validated by an expert panel using focus group discussion and together with subsequent analysis a number of improvements are recommended. The refined framework reflects a stakeholder satisfaction model (SSM) that has commercialisation potential. It is found that the SSM can be used to assess the sustainable procurement of built infrastructure, such as a high performance green building, with four of the six stakeholder groups considered as generic and

applicable to any sustainability initiative. The remaining two groups (namely "staff" and "environment") will need a modified assessment strategy for non-built environment initiatives.

This research makes a contribution to knowledge through presentation of a model, grounded in practice, that can assess the economic, social and environmental performance of organisational decision-making from a stakeholder satisfaction perspective. It is acknowledged that there are a number of metrics that can be used to assess the star rating of each stakeholder group, although the ones chosen in this research are drawn from existing tools developed and validated by others. The final stage, which is beyond the scope of this thesis, is to commercialise the SSM in the construction and property industry in Australia.

[401 words]

Acknowledgments

Above all, I am always grateful to the Almighty God for all the blessings and trials. With great respect, I am forever grateful to my principal supervisor, Professor Craig Langston for his wisdom, encouraging words, priceless ideas, guidance and inspiration, which enabled me to achieve remarkable progress in my research journey. Completing my PhD degree is probably the most challenging activity of my whole life. The best moments of my doctoral journey have been shared with many people. It has been a great privilege to spend several years at Bond University.

I would like to thank Mr Mike Power from Energex Australia and all the research respondents for making themselves available for the focus group and kindly sharing their experiences, thoughts and information. I would also like to thank Ms Belinda Glynn for her professional editing of this thesis.

If all the above-mentioned people form the foundation for helping me with my studies, then family is the roof that protects the foundation. There are no proper words to convey my deep gratitude and respect to my parents, brothers and sisters and my lovely nephews and nieces, who encouraged me to complete this project. You are everything.

A very special thank you to my fiancé, Noor Amarah. Words cannot describe how lucky I am to have her in my life. She has selflessly given more to me than I ever could have asked for. I love you, and look forward to our lifelong journey.

I cannot forget colleagues who went through hard times together, cheered me on, and celebrated each accomplishment: Dr Abdallah Al-khawaja, Rosemarie Rusch, Deborah Smith, Nedal Aburadi, Dany VA, Johari Amar, Mundhir Alhasani, Igo

Gari and Renato Alas. Equally, I dedicate this to my friends, Khaled Derbas, Olive Ouyang, Muath Abu Arqoub, Khaled Halteh, and Ghaith Al-qatarneh.

Lastly, I am forever grateful to all those people who made my journey memorable and I am sharing this bittersweet victory to all of you who made my dream a reality.

Contents

List of Tables

List of Figures

List of Abbreviations

3L	Long Life, Loose Fit And Low Energy
ABGR	Australian Building Greenhouse Rating
BPE	Building Performance Evaluation
BREEAM	Building Research Establishment Environment Assessment Method
BUHREC	Bond University Human Research Ethics Committee
CBA	Cost-Benefit Analysis
CBD	Central Business District
CEL	City Electric Light Co.
CEO	Chief Executive Officer
CLI	Customer Loyalty Index
CLI	Customer Loyalty Index
CSR	Corporate Social Responsibility
EIL	Extent of Influence and Leadership
EPC	Energy Performance Certificate
GBCA	Green Building Council of Australia

GHG	Greenhouse Gas
GOC	Government-Owned Corporations
GRI	Global Reporting Initiative
GSA	General Services Administration
GTMA	Grounded Theory Methodological Approach
IAP2	International Association of Public Participation
IISD	International Institute for Sustainable Development
IPO	Input-Process-Output
IRR	Internal Rate of Return
LCC	Life Cycle Cost
LEED	Leadership in Energy and Environmental Design
LOGIC	Learning, Oversight, Guidance, Information and Culture
NABERS	National Australian Built Environment Rating System
NEM	National Electricity Market
NPV	Net Present Value
OE	Organisational Ecology
OECD	Organisation for Economic Co-operation and Development
ODP	Ozone Depletion Potential
PhD	Doctor of Philosophy
POE	Post-occupancy Evaluation
PP	Payback Period
QBL	Quadruple Bottom Line

QDA	Qualitative Data Analysis
AIA	Australian Institute of Architects
ROI	Return on Investment
SAM	Sustainability Assessment Model
SEQEB	South East Queensland Electricity Board
SHA	Stakeholder approach
SSM	Stakeholder Satisfaction Model
TBL	Triple Bottom Line
UDE	Universal Design Evaluation
UK	United Kingdom
UKGBC	UK Green Building Council
UNCSD	United Nations Commission on Sustainable Development
US	United States of America
WEI	Workplace Ecology Index

CHAPTER 1:
Introduction

1.1 Rationale

The rapid increase in the world's population in the last thirty years has resulted in extreme population densities. This has affected the environment, natural resources and has also disturbed the balance of local ecosystems. It is therefore extremely important to take action that will restore environmental stability. Anticipating and realising this trend, individuals and businesses are demanding more sustainable practices and products. As a result there has been a shift in attitudes and increased demand for environmentally friendly buildings (Smith et al., 2006).

Many studies have provided conclusive evidence that climate change is human-made (UNEP, 2006; Rashid et al., 2011). Climate change is the result of several causes, including carbon emissions. The construction industry is accountable for approximately 40 per cent of all carbon emissions globally and is a major consumer of energy and natural resources. However, the construction business is also a major contributor to socioeconomic development, and therefore must be considered a part of the process of sustainability in our world (Rashid et al., 2011; UNEP, 2006).

There are several different definitions of sustainability. In general, sustainability has been defined as the capability of users, communities and developers to utilise resources well in order to develop our surroundings without endangering the future wellbeing of humans (Allenby, 2000). According to Brundtland (1987, p. 43) sustainability means “development that meets the needs of the present without compromising the ability of future generations to meet their own needs”. However,

there is a close link between the environment and the economy. As stated by Armaghani (2008, p.10), "society depends on the economy while the economy depends on the environment". The effects of urban activities and buildings on the environment have economic dimensions and vice versa. The intense competition in the real estate market means that sustainability and cost are both important factors in the development process. Therefore, there are many vital and important reasons to understand how sustainability can make a difference for businesses.

In recent years, the achievement of targets related to sustainability has become one of the key performance drivers for many business areas. As such, sustainability has received a lot of attention from various perspectives. One of the main issues that has captured the attention and interest of industry organisations is the issue of stakeholders (Chinyio and Olomolaiye, 2009). The building industry, for example, is characterised by having a large number of stakeholders that have an influence on sustainability and contribute significantly to the complexity of the issue due to their impact and role. However, there is a lack of acknowledgement that all of the sustainability-relevant stakeholders are important, resulting in their absence from the decision-making process, which can easily result in a failure to address all of the sustainability issues.

Therefore, it is of crucial importance to not only identify all relevant stakeholders but also to manage them, relate them to specific sustainability issues and measure their performance (Bal et al. 2013). Despite the importance of the relationship between the stakeholders and the sustainability, there is poor understanding about how that relationship can help to improve the opportunities for business in various areas, such as the financial, social and environmental impact of an organisation. There is no viable framework in the literature that can measure all of the sustainability issues emerging from and supporting this relationship.

This chapter provides an insight to this research. Section 1.2 presents the problem statement for the study and Section 1.3 discusses the research aim and objectives. Section 1.4 introduces the research questions, while Section 1.5 identifies the significance of the study's scope. Finally, Section 1.6 briefly describes the structure of the thesis.

1.2 Problem Statement

It is important to define and measure sustainability; however, this process is not easy. One way to measure sustainability is through measuring the level of satisfaction at a stakeholder level (Szekely and Dossa, 2014; Carroll and Buchholtz, 2014). According to Gossy (2008), a stakeholder is a group or individual who has the ability to affect an organisation's objectives and/or who are affected by these goals and their level of achievement. For the purpose of this research, this definition has been considered appropriate.

Various authors have stated that an organisation can achieve its objectives by engaging stakeholders within the sustainability development process (Carroll and Buchholtz, 2014; Blackburn, 2007; Eweje and Perry, 2011). Stakeholders can bring many benefits to the organisation, which is why they are considered to play a vital role. Their efforts include the level of transparency, the sustainability effort and its perspective variety, organisational and community support for these efforts, the future sustainability efforts, expansion of present capacity, sustainability awareness increase, greater involvement empowerment, broad policy change advancements and sustainability effort coordination improvement (Werther and Chandler, 2010). Through these principles, a strong foundation is developed and the relationship between the stakeholders and the organisation can be strengthened. This specifically includes both the stakeholders and sustainable development.

There is a need to create a method for assessing stakeholder satisfaction in terms of sustainability with an underlying goal of enabling future improvements in overall business performance. Drawing from existing models, this study creates a conceptual framework to assess stakeholder satisfaction in terms of economic, social and environmental sustainability in the organisation decision-making. This can be applied across various industries, and particularly the building industry. This framework is called the Stakeholder Satisfaction Model (SSM).

1.3 Research Aim and Objectives

The aim of this study is to develop a model for producing an objective and holistic assessment of organisation decision-making from the perspective of six stakeholder groups (company, staff, customers, community, government and the environment). This broad research aim can be broken down into the following objectives:

1) To review the existing literature concerning sustainable development from the viewpoint of the stakeholders satisfaction.
2) To integrate and identify stakeholder and related models that address economic, social and environmental sustainability.
3) To conduct an in-depth analysis of a case study of sustainable development.
4) To proposed, using grounded theory a conceptual framework to assess stakeholder satisfaction in terms of the procurement of sustainable built infrastructure.
5) To validate the framework through focus group discussion, composing a panel of industry experts.
6) To identify areas of improvement that refine the framework into a practical model suitable for future commercialisation.

The plan for this research is shown in Figure 1.1. This plan acts as a guide for the researcher throughout the research, even though the intricacies of the work were constantly evolving as one might expect when applying a grounded theory approach.

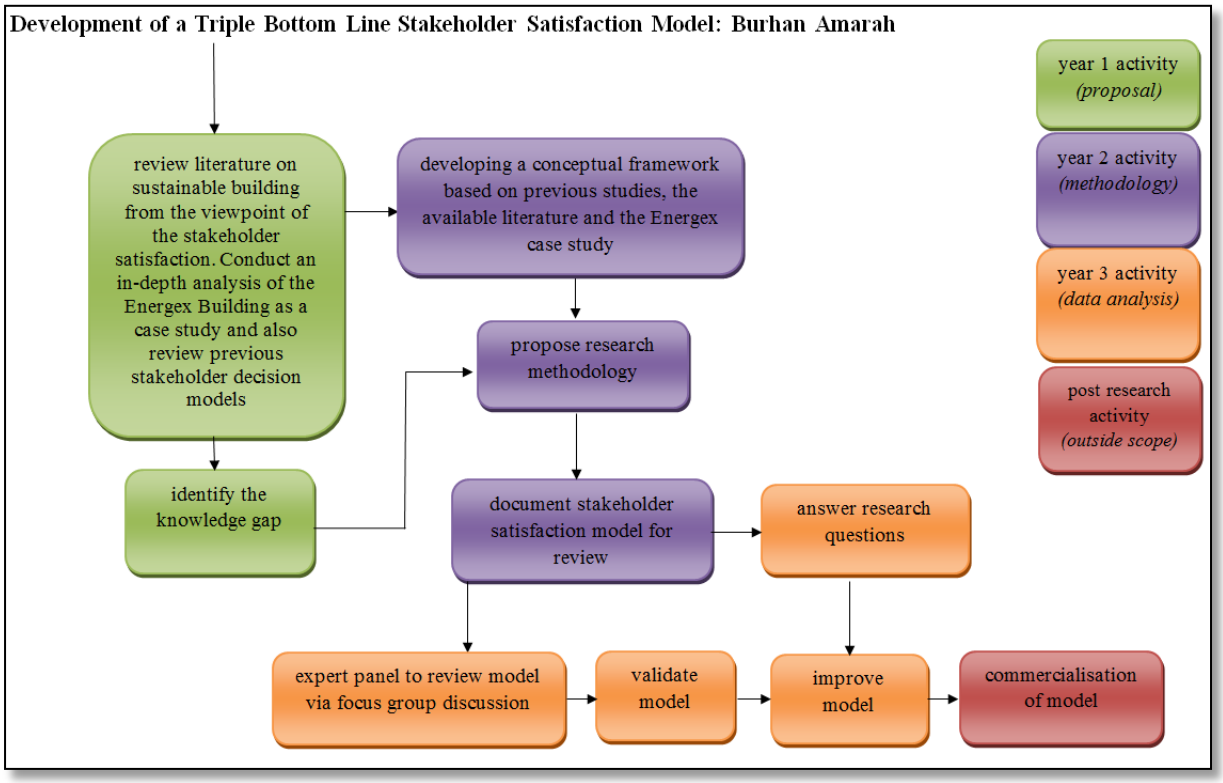

Figure 1.1 Research Plan

1.4 Research Question

The research question concerns the practicality of quantifying sustainable development initiatives in term of stakeholder satisfaction, in the context of the procurement of built infrastructure. A secondary question is whether this approach can apply to other type of organisational decision-making, albeit with some adjustment to the metrics applied to each stakeholder group.

1.5 The Significance of This Study

With continuous challenges occurring in the global business world, characterised by new sets of opportunities and risks, it is essential for organisations to make a significant effort in conducting ongoing reappraisal of good governance. The reason for this lies in the broadening of focus. It is no longer sufficient for an organisation's management to look only into the financial performance and strategic oversight (Hill et al., 2003; Smith, 2010; Weerasinghe, 2012). Today, the success and prosperity of organisations are increasingly and inextricably linked to a number of issues including brand, reputation, the quality of intellectual and human capital, climate change and the protection of human rights (Von Tulder et al., 2014). The role of the stakeholders has increased in both range and importance as organisations become more accountable for the way and extent in which they impact the preservation and enrichment of human, social and natural capital (White, 2012). With this in mind, it is understandable why the number of sustainability ranking models and schemes has grown significantly in the last decade, especially when stakeholder expectations have also changed the way in which company sustainability performance is measured (Okoye et al., 2013).

The model developed in this research provides assessments of how key pillars of sustainability (economic, social and environmental) interact with each other to form a new element called progress. The model is capable of demonstrating the balance between the strengths and weaknesses of the organisation, not just for the achievement of a better understanding of the organisation, but also assisting investors who are continuously looking for greater transparency of business performance. What this means is that in addition to financial performance, which remains the core of corporate disclosure, both stakeholders and investors place increasing value on business information related to the social and environmental

contribution, leading to organisations themselves reacting better to the needs of their stakeholders. Therefore, the role of assessment becomes invaluable.

1.6 Structure of the Thesis

This thesis is divided into seven chapters, including this one. The following paragraphs provide a brief summary of the thesis structure.

Chapter 2 is prepared in a logical structure, using the concept of an inverted pyramid in order to provide a better understanding of the underpinning literature. This chapter provides an overview of sustainability and triple bottom line according. A number of theoretical concepts are examined, including the stakeholder approach, stakeholder theory and stakeholder engagement. The role and importance of stakeholders are identified and it is noted that the stakeholder engagement process promotes the development of shared goals and collaboration as it is very important to consider the interests of all. The chapter discusses the increasing importance of taking measures to alleviate and minimise environmental damage caused as a result of business operations.

Chapter 3 identifies the knowledge gap concerning sustainability and stakeholders. It describes the research methodology and focuses on the accuracy and suitability of the chosen methods and the reasons for choosing those methods in order to answer the research questions. This research is based on grounded theory. The methodology comprises a number of separate but interdependent stages. The first step involves consideration of the literature review while the second step integrates and identifies the stakeholder models that have been published and validated in order to build conceptual framework. The third step involves considering a case study of actual practice. The final step involves seeking an expert panel to validate the framework through focus group discussion.

Chapter 4 explores a case study of how stakeholder satisfaction has affected the sustainable procurement of built infrastructure. The case study is the Energex Newstead building in Brisbane. This building achieved a six star Green Star accreditation and is considered a prime example of sustainable development and meaningful organisational decision-making.

Chapter 5 describes the conceptual framework that can be used to assess stakeholder satisfaction in terms of sustainability performance. In particular, the

ability to integrate a range of tools is presented via the use of a six point star rating scheme applied to each stakeholder groups.

Chapter 6 concerns validation of the conceptual framework via focus group discussion comprising a panel of twelve industry experts. The outcomes of this process lead to recommended improvements to the model, and close the loop to ensure that research is both practical and relevant to industry. The final design of the triple bottom line stakeholder satisfaction model is presented ready for future commercialisation

Chapter 7 comprises the conclusion and summary of the work, which explains the significance of the study, how the objectives have been achieved, and the limitations or possible bias in the work. Suggestions for further research are also identified.

This research is expected to continue as an external funding opportunity to commercialise of the SSM framework and assessment procedures and embed the model into practice.

CHAPTER 2:
Literature Review

2.1 Introduction

This chapter provides a review of the expert and academic literature surrounding then stakeholder satisfaction models and related tools that have had some success in measuring organisational performance across all three dimensions of sustainability. The literature review helps to identify the underpinning theory and forms a foundation upon which to build new ideas and hypotheses. The review also examines organisational decision-making literature, reflecting upon various theoretical and conceptual aspects of sustainable development. This chapter provides an understanding of the triple bottom line model.

This chapter is structured as follows. This introductory section states the purpose of the chapter and provides an outline of the remaining content. Section 2.2 focuses on sustainability and green buildings. It provides various definitions of sustainability and outlines the key concepts regarding the management of sustainable development cited in the literature. This section also discusses a number of green building rating tools that are used in Australia. After that, Section 2.3 defines the term stakeholder and discusses the theoretical models and key concepts proposed by scholars including stakeholder engagement, stakeholder theory and stakeholder analysis. The fourth section, Section 2.4, provides a background of the triple bottom line model, discussing its historical and subsequent development. Sections 2.5, 2.6 and 2.7 discusses the economic, social and environmental perspectives of the model and propose methods that can be

deployed to measure performance in the three dimensions of sustainable development. The final section, Section 2.8, concludes the chapter.

2.2 Sustainability and Green Buildings

2.2.1 Sustainable Development

The swift increase in the human population in the last 30 years has resulted in extreme population densities as well as the intrusion of development into previously unoccupied areas. This has affected natural resources and the environment and has also disturbed the balance of local ecosystems. It is therefore extremely important to take action that will restore environmental stability. Anticipating and realising this trend, individuals and businesses are demanding more sustainable products and practices. As a result there has been a shift in attitudes and increased demand for environmentally-friendly buildings (Smith et al., 2006).

There are many different definitions of sustainability. In general, sustainability has been defined as the capability of developers, communities and users to utilise resources well in order to develop the surroundings without jeopardising the future well-being of humans (Allenby, 2000). According to Brundtland (1987, p.43) sustainability means "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." The notion of sustainability is not only applicable to buildings: sustainability exists in any process aimed at reducing the consumption of natural resources. Corporate responsibility, corporate social responsibility, responsible entrepreneurship and corporate citizenship are different synonyms used to describe the ethics of sustainability, which basically involves a balanced amalgamation of social as well as environmental contemplation in business operations (Newport et al., 2003).

Previous studies have provided conclusive evidence that climate change is human-made (UNEP, 2006; Rashid et al., 2011). Climate change is the result of several reasons, including carbon emissions. The construction industry is responsible for approximately 40 per cent of all carbon emissions globally and is a major consumer of energy and natural resources (UNEP, 2006). However, the construction business is also a major contributor to socioeconomic development and safe housing is a human need, so it is important that construction be an integral part of the process of sustainability in our world.

There is a close link between the environment and the economy. As stated by Armaghani (2008, p.10), "society depends on the economy while the economy depends on the environment." The effects of urban activities and buildings on the environment have economic dimensions and vice versa. The recession that has been going on in the world since 2008 is a problem that cannot be ignored, especially when combined with the intense competition that exists in the real estate market. Therefore, there are many vital and important reasons to understand how sustainability can make a difference for businesses. To make sustainability profitable for businesses requires good management that is able to quickly adapt to change. Alternatively, there may be risks for businesses if management fails to deal with changes in the marketplace that require sustainability practices (Conrad and Feltz, 2009).

2.2.2 Sustainability in Australia

Australia is a leading country concerning the development and implementation of sustainable practices in the building industry, with both existing and new buildings in Australia increasingly implementing green practices. Building rating schemes have emerged as a means of guiding the design and operation of more environmentally friendly buildings. The sustainability of buildings in Australia is measured using the Green Star rating system. The number of green buildings in Australia has increased significantly since the Green Building Council of Australia launched in 2002 (Armitage et al., 2011).

Many companies are realising the impact of their actions on the environment and are taking measures to alleviate and minimise the environmental damage caused as a result of their operations. The trend is evident in the commercial building sector and, as a result, there has been a shift in the way buildings are built, designed and operated. According to the Commonwealth of Australia (2011), environmental sustainability is one of the prime focuses of the Australian government, especially local governments of Victoria and Queensland, which has become actively involved in protecting natural as well as man-made environments and using Australia's resources in a sustainable manner.

Kato et al. (2010) conducted a study on the experiences of working, renting and owning Green Star-certified buildings in 2010. Based on their findings, the study made a number of recommendations for real estate development companies,

investors and end users to help improve the performance of green buildings in Australia, as measured by the Green Star system. The recommendations were:

1. *Improve education:* In general, education provides users with a good background for the use of a product. There are many methods that can contribute to improved understanding of sustainability for users, such as induction programs and workshops. These have a greater impact than other methods, such as the distribution of a tenant guide.
2. *Develop an effective green strategy:* Management has a significant role in improving each individual's consciousness of environmental behaviours. At the same time, staff have a personal responsibility to make a difference. It is the common responsibility of management and staff to reach the goals of the project which, in this case, is to ensure and enforce sustainable business practices.
3. *Make good use of sustainability experts:* This study shows that people who have experience in working or living in green buildings obtained the greatest benefit in terms of sustainability when compared to people without that experience. It is easy to get counselling for green buildings, as there are many people with knowledge and expertise in this field.

2.2.3 Green Buildings

Many studies have highlighted that buildings globally consume about 35 per cent of total carbon dioxide production, 50 per cent of total resources and material, 45 per cent of total energy and 30 per cent of total drinkable water extraction (Ahmed and Rashid, 2009; UNEP, 2006). This usage requires the major consumption of natural resources and has a negative impact on the environment. When the development of new buildings and the material used in their construction are taken into account, this amount increases to 48 per cent. These figures demonstrate that buildings and the infrastructure required for their use and maintenance considerably impacts the surroundings in which they operate (Sabol, 2008).

Cohen (2006) found that almost 90 per cent of Americans' time is spent indoors. As well as the resources used to develop buildings, resources are being used because people are spending so much time inside (for example, for heating, cooling and lighting). Thus, the construction, design, fit-out, insulation and overall building orientation can significantly influence the environment and the health of humans (Ellison et al., 2007).

Understanding the enormity of the environmental cost of building development, many organisations have realised the importance of sustainable buildings. As a result, there have been reforms and the restructuring of existing and new buildings in order to minimise the impact of the building industry on the environment. Some of the remedial options adopted by the construction industry in order to achieve sustainable development infrastructure are reductions in energy, resource and water consumption. These actions have resulted in the expansion of green building industry in the United States from US $12 billion a year in 2007 to a predicted US $42 billion by 2015 (Sabol, 2008).

Due to increasing pressure from environmental agencies and the institutional framework, it is critical that the construction industry becomes environmentally sustainable (Warnock, 2007). However, it is important that the needs of the building industry are not compromised in doing so. Warnock (2007) asserts that since 2000 there has been a growing impetus to develop globally sustainable buildings and infrastructure.

Designing green-friendly buildings is an emerging trend in the construction industry and green design is a very significant factor that may affect the value of a building because of its future impact on society as well as the environment (Eichholtz et al., 2010; Smith et al., 2006).

There are several definitions of green building in the literature. The UK Green Building Council (UKGBC) (2008) defined green buildings as highly efficient, having a reduced drain on natural resources when compared to traditional buildings, approximately zero emissions of carbon, and a positive role in the economic performance for owners of these buildings in terms of return on investment. Roper and Beard (2006, p.93) defines green buildings as “those buildings that have minimum adverse impacts on the built and natural environment in terms of the buildings themselves, their immediate surroundings and the broader regional and global setting.”

Ellison et al. (2007) state that features which contribute to a building being considered green include good use of natural sunlight, natural ventilation chimneys, shading windows and living rooftops. Based on these definitions, in this research a green building is interpreted as sustainable building that is intended to

improve intimal environmental conditions as well as reduce the overall negative impact on its surroundings (Fischer, 2010).

Previous studies have shown that there are a number of advantages associated with sustainable design and construction practices. They not only decrease the negative environmental influences of development and construction but also have economic benefits such as increased productivity and improved public relations (Castillo and Chung, 2004). Green buildings are designed, implemented and operated by sophisticated methods and techniques that contribute to reducing environmental impact, which leads to a reduction in the operating expenses (running costs) and maintenance liability (Kats, 2003).

However, when discussing green buildings, some argue that the economic recession makes sustainability a less viable option for the development industry given that sustainable buildings cost more to build (Roper and Beard, 2006). However, when all the costs and benefits over the life of a building are taken into account, not just the operating and construction costs, green buildings tend to cost less than traditional buildings over the long-term. Also, in regard to investment in sustainability buildings, green buildings are expected to be the first choice for buyers and tenants if there is any evidence that they reduce long-term costs and provide health benefits to the user.

2.2.4 Green Building Rating Tools

Buildings operate in the external environment and emit certain kinds of gases, such as carbon dioxide, and they can therefore have a considerable impact on their surroundings. This impact increases with the installation of air conditioners and heat-generation plant. Therefore, it is often thought that the value of a building can be demonstrated in terms of its sustainability, in that if they use a large amount of electricity and resources, they will be more expensive to run (Wilkinson et al., 2008). Reed et al. (2009) argue that buildings in different countries have different environmental conditions, therefore it can be difficult to determine the appropriate method for measuring their environmental sustainability. Hence, the utilisation of green building rating tools that can be used globally is vital to allow for environmental sustainability to be measured and compared.

There are a number of different rating tools that analyse the total environmental impact of green buildings (see Table 2.1). These tools are designed to effectively

cater for the specific needs of each environmental system and market (Myers et al., 2008; Dixon et al., 2012). Some of the rating tools are modifications and extensions of previous models that were developed in different countries. Therefore, it is possible to find the linkage between many systems, such as the BRE Environmental Assessment Method (BREEAM), the Leadership in Energy and Environmental Design (LEED) and the Green Star building rating systems.

The two international rating tools used for comparing buildings on an international level are BREEAM and LEED. These tools are used by different stakeholders for making a comparison between their buildings by using an international language. Kennett (2009) asserts that the LEED and the BREEAM provide the basis for attaining a globally accepted building-rating tool. In Australia, Green Star is the most common rating tool.

Table 2.1 Main Green Building Rating Tools

UK and Europe	North America	Rest of Word
BREEAM (inc eco-homes)	LEED (US and Canada)	Green Star (Australia)
The Green Guide to Specification	U.S DOE (U.S Department of Energy) Design Guide (U.S.)	HK-BEAM (Hong Kong)
Office Scorer	WBDG (Whole Building Design) (U.S.)	LEED (China and India)
ENVEST	HOK Sustainable Design Guide (US)	Greenmark (Singapore)
Sustainability checklists (eg SEEDA;BRE)	BREEAM Canada (Canada)	GBTool (South Africa)
Environmental Impact Assessment (EIA)	Green Globes (US & Canada)	
Strategic Environmental Assessment (SEA)		

Source: Dixon et al. 2012; Reed et al. 2009

2.2.4.1 Leadership in Energy and Environmental Design (LEED)

The US Green Building Council developed the LEED tool in 1998 (IFMA Foundation, 2010). It is the standard used to compare green building practices across the United States of America (US). Many studies have recognised that LEED is the most widely accepted scheme of environmental evaluation globally. Projects using LEED have been registered in 24 different countries. LEED has a set of credits that are assigned to each aspect of the environmental sustainability (Lee and Burnett, 2008). These include indoor environmental quality, atmosphere and energy, design and engineering, sustainable sites, materials and resources, water efficiency and

innovation (Asdrubali et al., 2008). Buildings achieve single points for surpassing each credit rating. In the case of renewable energy and energy performance, the credit rating is achieved when an improvement in performance is noted. This sets the basis for the total scoring system. On the basis of these scores, buildings qualify for any of the four levels, as shown in Table 2.2.

Table 2.2 LEED Credit Rating Score

Points	Classification
26-32	Certified
33-38	Silver
34-51	Gold
52-69	Platinum

Source: Roderick et al., 2009; Lee and Burnett, 2008

2.2.4.2 The Building Research Establishment Environmental Assessment Method (BREEAM)

The UK Building Research Establishment (BRE) developed BREEAM in 1990. (IFMA Foundation, 2010). BREEAM is generally accepted throughout the UK as a green building rating tool that helps to measure the environmental impacts of design and management. Another version, called BREEAM International, is destined for regions of the Gulf and Holland (Lee and Burnett, 2008).

BREEAM Offices 2008 utilises a similar credit rating system for analysing the environmental impact of the buildings as LEED does. The ratings are done on the basis of energy, usage of water, land, material, management, transport, health and well-being and ecology and pollution. The total number of credits is 102 and buildings are assessed based on the credit rating they achieve (Roderick et al., 2009). There are different levels set for each credit score (Table 2.3).

Table 2.3 BREEAM Credit Rating Score

Points	Classification
<30%	Unclassified
≥30%	Pass
≥45%	Good
≥55%	Very good
≥70%	Excellent
≥85%	Outstanding

Source: Roderick et al., 2009

The Department for Communities and Local Government (2008) and Hernandez et al. (2008) show that there are two models used for demonstrating the improvement in energy consumption and carbon dioxide emission. These are the Energy Performance Certificate (EPC) and Credit Ene 1-Reduction of carbon dioxide emissions. The score of each is assessed on the basis of 15 credit scores. On the basis of this score, the buildings are perceived as more energy efficient or less energy efficient. The actual building and the reference building models are also used to access the carbon dioxide ratings, which show the level of reduction in carbon dioxide emission (Roderick et al., 2009).

2.2.4.3 Green Star

GBCA launched Green Star in 2002 (IFMA Foundation, 2010). This is the most widely accepted rating tool used in Australia for evaluating the impact of building design on the environment but has similarities to LEED. It was developed to determine the importance and benefits of green buildings in both hot and dry weather. Australia's weather conditions demand cooling and solar shading systems to be installed in buildings in order to save the environment from harmful effects (Magent et al., 2009).

The Green Star rating system supports alignment between organisational benefits and environmental benefits. It is a holistic rating tool that entails and assesses the overall impact of buildings on the environment rather than being focused on any one particular aspect, such as energy emissions. The Australian construction and building industry use this tool extensively since it is regarded as the best rating tool for the Australian market and it is the benchmark for assessing the environmental sustainability of the infrastructure, design and construction of green

buildings. The Green Star rating tool has been specifically designed for Australian buildings and helps the building industry identify what building designers need to do in order to achieve a green status (GBCA, 2012; Magent et al., 2009).

The Australian Government supports the Green Star system, therefore there are many different types of government buildings that are assessed by Green Star rating system. These include libraries, community centres, council offices, town halls and sport centres. Other community buildings that have been assessed using Green Star are healthcare centres, high schools, universities, schools, shopping arenas, residential buildings, commercial offices and industrial buildings (GBCA, 2012).

The Green Star rating tool is also helpful in determining the scope of further development in existing buildings. Assessing the current sustainability of a building helps to determine what further amendments need to be made in the company's structure to make buildings more sustainable. The Green Star rating system contains indicators that enable companies and organisations to track the changes that are required to make buildings sustainable. There are different parameters used in Green Star. One set of parameters identifies the variables used in collecting the data and measuring sustainable development, while the other set of parameters are used to evaluate the overall performance of buildings based on the green-rating criteria. These tools enable the buildings to become greener by introducing significant changes in the practices and procedures of building (Seo et al., 2006).

Recognising the enormous environmental impact of buildings, the building industry is adopting environmentally sustainable practices. The tools developed for achieving this sustainability play an important role in minimising the overall environmental impact of the building industry and making a positive contribution towards society. The constant improvements and enhancements that are happening in building structures are an effort by organisations to apply green practices in the pursuit of an environmentally sustainable rating, such as a Green Star rating (GBCA, 2012).

The major perception regarding what constitutes a green or environmentally-sustainable building is its efficient use of energy, and that if the overall energy consumption of buildings is reduced, they therefore become green. However, Green

Star has established a totally different paradigm to measure the environmental sustainability of buildings. When evaluating the sustainability of buildings, it takes into account the resources used, such as water and heating. The whole building structure is evaluated on the quantum of efficient consumption of these resources in the building, which also help to look after the welfare of the inhabitants and users of the building and benefit the environment (GBCA, 2012; Roderick et al., 2009).

Green Star has 75 points on which buildings are judged to qualify for the certification level (Ding, 2008). The scoring system is flexible enough to cater the credit needs of every project. According to Roderick et al. (2009) and Seo et al. (2006), there are different aspects on the basis of which credit scores are achieved, namely energy, usage of water, land, material, innovation, management, transport, health and well-being, indoor environmental quality, emission and ecology and pollution. The building's certification is assigned on the basis of their score. The number of stars denotes the certification level, as shown in Table 2.4.

Table 2.4 Green Star Credit Rating Score

Stars	Points	Classification
1-3	10-44 points	Not eligible for formal certification
4	45-59 points	Best practice
5	60-74 points	Australian excellence
6	≥75 points	World leadership

Source: Roderick et al., 2009; Seo et al., 2006

Greenhouse performance is rated on the basis of 20 points (Roderick et al., 2009). These points are assessed using Credit Ene-1 of Greenhouse Gas Emissions. The total score of 20 accounts for 14.1 per cent of the total credit score rating. The two methods designed for calculating the forecast greenhouse emissions are the Green Star Energy Calculator and the software program through which the energy modelling calculation is performed. The software adheres to the verification explanations and the requirements given in the NABERS (National Australian Built Environment Rating System) Energy methodology. There are a further two approaches prescribed in the NABERS: the NABERS Energy Base Building rating and NABERS Energy Whole Building rating.

Although much of the current discussion has been focused on how the Green Star system is used to assess the environmentally sustainable rating of buildings, it is vital that impact of such initiatives be analysed, considering factors such as the cost of achieving such ratings and the impact on both individual projects and the industry overall. There are factors that hinder the adoption of Green Star rating system. These include weather, transport framework and the remoteness of the location where the building is to be developed. For example, the projects and buildings developed in remote areas are usually less likely to achieve a Green Star transport impact rating than projects located in inner-city areas (Department of Public Works, 2008).

To achieve a Green Star rating, buildings are assessed and, based on the number of points scored, assigned stars. There are also different points and ranges under which the building falls. The point system assesses the environmental sustainability of the buildings (Reed et al., 2009). The multi-category rating system based on other rating tools also has certain criteria that the buildings have to pass. This also hinders the adoption of the Green Star rating system. When buildings are successful in integrating the collective systems required to obtain an environmentally sustainable rating, a high level of environmental sustainability is ensured.

The assessment and evaluation of green buildings is an important aspect of measuring and reducing the total environmental impact of buildings and the building industry. The Green Star rating system is constantly being changed and improved to enhance the sustainability of the buildings. With the current green trends, further changes are expected to occur in the future. Thus, the analysis indicates positive signs for the adoption and development of environmentally sustainable buildings. In many established economies in Australia, environmental professionals have embraced the concept of the Green Star rating system. The use of the Green Star rating tool is projected to increase in the coming years due to the enormous environmental benefits its use provides.

2.3 Stakeholders

2.3.1 Definition

There are a number of definitions for the term ‘stakeholder’ in the literature, without any common or universally accepted approach. For some authors, the term

represents any individual or a group that can affect or is affected by the achievement of the organisational objectives. In other words, stakeholders are those individuals or groups whose support is essential for the survival of an organisation. Stakeholders have also been identified as constituents with a legitimate claim on the organisation. A more explicit definition makes a distinction between primary and secondary stakeholders, where primary stakeholders refer to those stakeholders that affect the survival of the organisation through their continuing participation and include investors, shareholders, customers, employees, suppliers and communities, while secondary stakeholders refer to those that are not crucial for the organisation's survival, but are none the less affected or can affect the organisation without being engaged in any transactions with it (Gossy, 2008).

The main reason for the development of these definitions and the lack of a universally accepted one originates in the problem of defining the term “legitimate stake”. Indeed, many of definitions mentioned above have some implicit assumptions in regards of stakeholder legitimacy, without offering a straightforward explanation of what constitutes legitimate and illegitimate stakeholders (Reed et al., 2009).

Therefore, it is much more reasonable to consider the term stakeholder not on the basis of a definition, but on the basis of three main attributes: power, legitimacy, and urgency (Boyle et al., 2011). The power attribute defines to what extent a certain party (individual or a group) has the means for imposing its own will in a relationship, the legitimacy attribute is based on the behaviours and structures that are socially established, while the urgency attribute describes the time or the severity of the claims set by the stakeholders (Boyle et al., 2011).

2.3.2 Historical Background

Stakeholder, as a concept, began to appear in corporate management thinking and literature in the 1930s. A good example of this is the identification of employees, customers, shareholders and the general public as significantly important for the business operations of General Electric during the great depression in America (1929-1941). However, it was only during the last half, and particularly the last quarter of the 20th century that stakeholder as a label appeared and was defined through several approaches, some of which are mentioned above (Reed et al., 2009). This is best illustrated through the following graph (Figure 2.1), which is based on published articles and indicates the development history of the term.

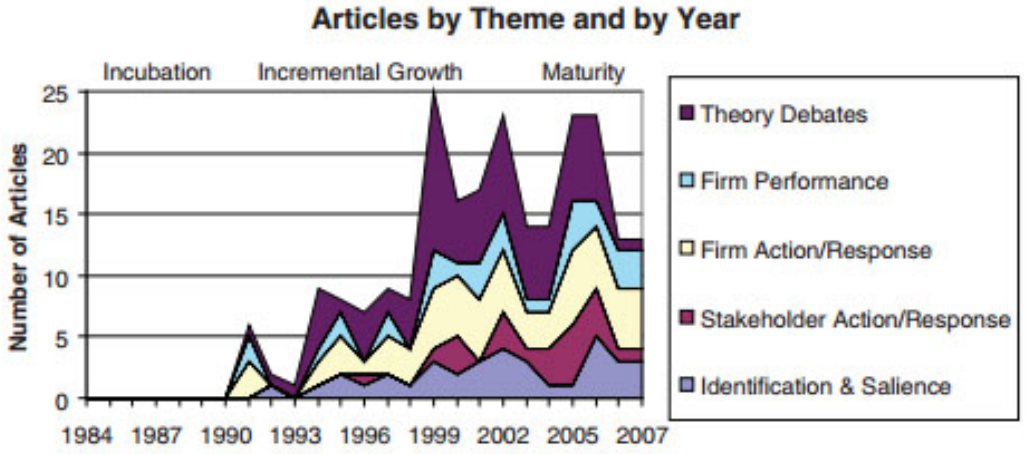

Figure 2.1 Theoretical and Empirical Time Frequencies by Year

Source: (Laplume et al., 2008).

What can be clearly seen here is a distinction between three separate periods one of incubation, one of incremental growth and one of maturity. In the incubation period, which lasted from 1984 to 1991, stakeholder literature with special emphasis on stakeholder theory was emerging. However, it was limited to book chapters, dissertations and conference proceedings. The second period, between 1991 and 1998, was characterised by an incremental growth, as stakeholders and stakeholder theory not only became more popular and discussed in leading academic researches and journals, but they have also received practitioner validation, and the terms ceased to be merely academic constructs. Finally, the third period, identified as a period of maturity, begun in 1998 and has continued ever since, is a period in which stakeholders, and stakeholder theory in particular, have become the focal point of significant attention and research. During this period, these constructs have been reviewed from a number of different perspectives, offering insights into their influence and relationship with various implementation, competitiveness and ideological issues (Laplume et al., 2008).

2.3.3 Stakeholder Theory

Stakeholder theory describes, prescribes and derives the corporate governance alternatives which include and balance a number of interests. The development of stakeholder theory has led to three distinct theoretical lines: an instrumental, a descriptive, and a normative dimension. Instrumental stakeholder theory assumes that managers must consider the interests of the organisation's stakeholders if they want to maximise the organisation's objectives. The descriptive dimension offers

social research on how the stakeholders, organisations and their managers interact, and these two dimensions form what is recognised as an analytical approach to the stakeholder theory. The normative dimension prescribes courses of actions for managers, or suggests what they should do, while there is one more additional dimension that suggests the metaphorical use of the stakeholders. These last two dimensions form what is known as a narrative approach to the theory (Nwanji and Howell, 2004).

However, even though stakeholder theory is widely used for research and practical purposes, it is still the subject of serious and wide criticism. Some authors, for example, have proposed that the theory has no solid foundation in either economic theory or ethical theories. Others suggest that it is very vague, ambiguous and broad, which is due perhaps to the inconsistency of the definitions of a stakeholder and a stake. There are even authors that point out the inappropriateness of the theory in organisational, managerial and strategic issues due to its tendency to magnify, blur and/or neglect (Fassin, 2009). The biggest and most serious criticism of stakeholder theory is that it is pathological towards the democratic society because the interests of managers are limited to satisfying the stakeholders of the organisation, without considering the cultural and ethical basis of the societal frame in which the stakeholders are situated (Mackey, 2006).

2.3.4 Stakeholder Approach (SHA)

Simply defined, the stakeholder approach serves to map the actors and their interests in a specific relationship. Its purpose is to determine the social order components and to assess their significance in relation to the organisation (Phillips, 2003).

The stakeholder approach highlights the importance of developing and investing in relationships between those that have some stake in the organisation. The main point of this is that if these relationships are to be stable, they need to be based on shared values and/or principles. This allows the managers of organisations to incorporate their personal values in the creation and implementation of their organisations' strategic plans. In other words, the stakeholder approach highlights the importance of creating and implementing an enterprise strategy, because it enables the fitting and balancing of the organisational values with those of its managers, alongside the stakeholders' expectations and various social issues. The stakeholder approach can be traced from various philosophical foundations. For

example, some authors consider it to be closely related to an ethical theory of business, while others propose it is founded on the fairness principle. There are even those that place its grounds on the ethics of care or on social contract theory (Freeman, 2004).

However, a more valid and justified perspective is the notion that the stakeholder approach enables the development of an entrepreneurship theory which is more robust and is a theory that enables a better understanding of entrepreneurial risk. This view, however, also suggest the avoidance of excessive entrepreneurial risks, which are in many cases necessary for increasing the size and profitability of the business (Freeman et al., 2004).

2.3.5 Stakeholder Engagement

To emphasise the role and importance of stakeholders, the engagement process promotes the development of shared goals and collaboration instead of developing barriers for protection against the complex external environment. If the leadership and management of an organisation are successful, it is very much oriented towards and committed to the developing of links and networks with the various external stakeholders. Thus, stakeholder engagement represents a means for the development and enhancing of mutual understanding. This understanding leads to better communication, which helps build relationships between the organisations and their stakeholders that are of high quality. This is why stakeholder engagement is so important (Gould, 2012).

Several models have been developed in recent years to enable and support stakeholder engagement in practice. A three phase methodology was developed by Gable in 2005 (Kimiagari et al., 2013). The first phase refers to internal preparation, which means that the organisation is occupied with the identification of the right leader, the building or training of the team, the measuring of the baseline performance of the organisation and the perceptions of this performance by the public. The second phase includes the identification and accounting of all the organisation's stakeholders, the mapping of the roles of these stakeholders in alignment with the business objectives of the organisation, analysing the results of these activities and incorporating them into the strategic plan of the organisation. In the third and final phase the organisation develops a plan for stakeholder engagement that will help achieve the set business objectives, but it also measures, monitors and communicates the results of this engagement.

Yet another model of stakeholder engagement proposed that the process is conducted in five phases: the identification of key stakeholders; analysis and planning; strengthening of the capacities for engagement; designing the process and engaging; and acting, reviewing and reporting. These phases are shown in Figure 2.2.

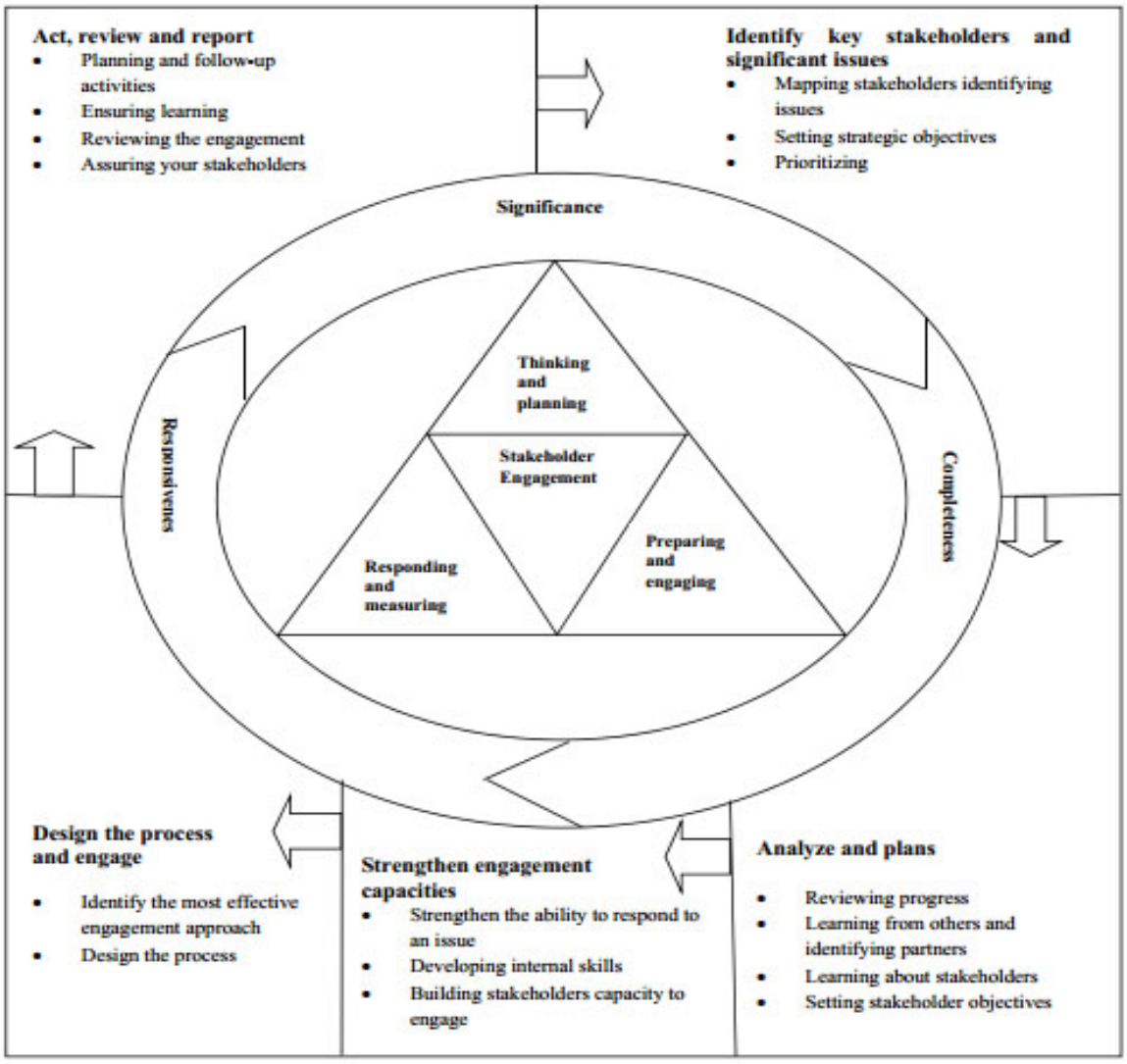

Figure 2.2 The Stakeholder Engagement Model in Five Phases

Source: (Bal et al., 2013)

The examination of these two models indicates that the main processes and issues are the same in both cases, regardless of the different number of phases they use.

2.3.6 Stakeholder Analysis

Stakeholder analysis (SA) is a method which is used to help and aid policy and institutional reform processes by incorporating and accounting for the needs of

those who have an interest or stake in the decisions and activities of a business (Reymond et al., 2014). SA is an important tool as it requires consideration of all stakeholders and analysis of how each of the individuals, groups and organisations will be affected by the decision-making processes of the business. Carrying out SA enables organisations to consider the interests of all stakeholders and ensure that their interests remain protected and satisfied. Meeting the needs of stakeholders is increasingly important and organisations globally are looking for ways to integrate stakeholder theory into their approach, with consideration of the interests of all stakeholders being seen as important and integral to the organisation's mission (Schmeer, 1999; Reymond et al., 2014).

SA enables organisations to plan their policies, procedures and operations by assessing how the stakeholders' interests can be addressed through their decision-making processes (Schmeer, 1999; Reymond et al., 2014). SA is an important part of stakeholder management. The World Bank lists four features that are integral to SA: the position of stakeholders, the level of power/influence, the level of interest they hold and the group to which they belong. The attributes can be identified from different data collection methods, including interviews.

The level of stakeholders' influence varies according to the type and quantity of power and resources the stakeholder can use to promote and highlight its position. The level of interest refers to the importance or priority that the stakeholder gives to the issue or reform area. These attributes generally indicate the capabilities of stakeholders to support or restrict business decisions or actions (Schmeer, 1999; Reymond et al., 2014).

2.3.7 Stakeholder Satisfaction

The relationship between the organisation and its stakeholders has been one of the main subjects of research in strategic management literature, which clearly indicates the importance of this relationship. Additionally, a number of studies have been devoted to determining the success of such a relationship, leading to the conclusion that stakeholder satisfaction is crucial for the success of any business in a global, hypercompetitive business environment (Alexander et al., 2005).

In a simply constructed definition, stakeholder satisfaction refers to the satisfaction of all of the interests of the stakeholders. Or, put differently, it represents a

business result that is related to a model for stakeholder governance that is based on the mutual interests premise (Gunay, 2008).

The above definition not only helps in acquiring a better understanding of stakeholder satisfaction as a term, it also emphasises the role of corporate governance and its influence upon satisfaction, as well as the importance of the mutual relationships between the stakeholders and the organisation. What this suggests is that factors influencing these relationships determine the satisfaction of the stakeholders to a great extent. In this context, trust between the stakeholders and the organisation, fairness, equitability and honesty have been found to be most crucial for the achievement of successful stakeholder satisfaction (Alexander et al., 2005).

Martey (2014) provided a very similar view. He stated that good corporate governance has a significant and positive impact on the satisfaction of stakeholders. More specifically, he identified the impact as a result of a number of governance principles that were based on four main governing characteristics: responsibility, accountability, transparency and fairness.

Both approaches described above suggest that the main influencing factor on stakeholder satisfaction is good corporate governance that is based on principles and characteristics that emphasise ethics and responsibility.

2.3.8 Measuring stakeholder satisfaction

The quality of the relationship between the stakeholders and the organisation is one of the main factors that influences business performance and success. In order for this quality to be at the desired level, stakeholder satisfaction is crucial, and should be based on the identification and use of the most adequate satisfaction measures, the existence of structured and open communication, comments regarding the satisfaction levels and an overall score for the satisfaction. The measures of stakeholder satisfaction can vary and may include the type and frequency of communication, capital flows, historical events, opposite interests and the existence of personal relationships with the stakeholders (De Witte and Jonker, 2006).

The very process of measuring stakeholder satisfaction, however, is not simple or well defined, so can create significant problems for organisations. The reason for this lies in the fact that stakeholder satisfaction can be considered as a meaningful

and accurate measure of corporate success only if all who are affected by a certain decision are capable of making a well-informed judgment about the decision, a situation that is practically impossible (Burrell et al., 2014).

This raises the question of what methods should actually be used by the organisation to measure the extent of meeting the stakeholders' satisfaction. Common corporate practices indicate that many organisations tend to simply assume how good their performance is based on information like whether the remuneration and benefits are the same as those of other similar companies in the area of if the customers are happy. Miles (2012) argues that this is not a well-informed or realistic measurement of performance. Instead, what is actually needed is a selection of appropriate metrics that will enable empirical measurement of the extent to which the expectations of the stakeholders are met (Miles, 2012).

In general, it is important to identify specific stakeholder satisfaction attributes and to then define one or more metrics that are quantifiable, as otherwise it is impossible to integrate stakeholder theory into the corporate aims of the business. The problem is that some attributes are difficult to quantifiably measure, such as career development. However, even for such attributes, appropriate measurement metrics can be identified after an application of systematic and creative thinking. Thus, for the attribute of career development mentioned above, a good measurement can be achieved through examining the number of employees that have been promoted in a specific period of time, or the number of employees that have undertaken training for career development per annum. These examples indicate yet another important perspective of measuring the meeting of stakeholder expectations (or the measurement of stakeholder satisfaction in general) – time. When using metrics for measuring the satisfaction of stakeholders, while the numbers gathered from the measured attributes are important, the trend is even more important. This means that the measurement of attributes should be conducted over a specific period of time and that the trends must be taken into consideration, which requires the use of a continual measurement and reporting scheme (Duhaime et al., 2012).

The methods that can be used for acquiring quantifiable data in regards to the extent of meeting stakeholder expectations can be divided into several major categories (Maurer, 2007). The first category is methods for empirical observation, which means that specific attributes will be measured through observation in

practice. The second category refers to sampling, which is somewhat similar to the empirical observation, however, instead of including all the stakeholders in the measurement, it is focused only on a sample. The third category includes interviews and surveys conducted through questionnaires that the stakeholders need to answer, while the fourth refers to focus groups, which also encompasses the use of surveys and interviews but are conducted with smaller groups. In addition to these four categories, there are other methods and categories that can also provide insightful results.

One of the most useful methods for measuring stakeholder satisfaction is gap analysis. In general, this method consists of the identification of the most adequate and important issues for the stakeholders, gathering an insight of expectations in regards to these issues and identifying the gap between the performance on the issue and the stakeholder's expectations on the same issue (Huber and O'Gorman, 2008). There are a number of reasons why gap analysis can be considered as a good tool for measuring stakeholder expectations. These include a determination of the extent to which the expectations are not achieved, an improvement of and encouragement of further communication with the stakeholders, the provision of ideas for closing of the identified gaps, gathering justified ideas about needed trade-offs and making decisions that are based on true values (Kliem, 2011).

However, in order to accurately assess the satisfaction of the stakeholders, it is not enough to examine their needs and expectations in relation to the achieved results: the performance of the organisation in general must also be examined. This examination is not only required to understand and meet the expectations of the stakeholders, it must also be balanced with the needs and expectations of the organisation in general. This requires careful analysis of the stakeholders, with specific attention paid to the relationships between the stakeholders and the organisation, as these relationships need to be established as well as prioritised and maintained. Prioritisation is particularly important because in many cases stakeholders that are considered as minor or not very important can have significant influence on the success of the organisation (Husted and Allen, 2010).

In other words, if the organisation focuses on the satisfaction of the stakeholders alone, it can easily encounter failure and go out of business. This is why stakeholder satisfaction should not be addressed as a single issue, but be approached in a systematic and integrated manner. One of the ways in which this

can be accomplished is through the implementation and use of a quality management system in the organisation. Such a system revolves around and takes into consideration both the needs and expectations of the stakeholders and the organisation, addressing among other things the objectives of quality, regulatory requirements and performance measurement (Mutafelija and Stromberg, 2008).

From this perspective, it is understandable why the tools for measuring stakeholder satisfaction should not be focused only on stakeholder satisfaction but also take into account a much broader approach. The use of a broad measurement tool, such as the Performance Prism for example, can lead to insightful results (Striteska and Spickova, 2012). The Performance Prism was developed as a second generation framework for performance management. The Prism can be considered as adequate for such measurement because it requires that the organisation consider the needs and expectations of its stakeholders and the ways in which it can deliver value to them. Furthermore, the Prism requires that organisations integrate and balance their processes, strategies and capabilities and that that recognition is made of the reciprocal nature of the relationship between the stakeholders and the organisation.

In summary, it must be emphasised that the measurement of stakeholder satisfaction is of crucial importance for any organisation. However, it should not focus only on the identification of stakeholder satisfaction attributes and quantitative metrics for their measurement. Instead, it should be approached strategically and systematically, in order to align and balance the expectations and needs of the stakeholders with the expectations and needs of the organisation. For this reason, measurement tools which encompass metrics for stakeholder satisfaction and metrics for the overall organisation's performance can be considered as more adequate and produce more justified and accurate results.

2.3.9 Stakeholder from a Sustainability Perspective

The previous section demonstrated that the influence of stakeholders on organisations is a well-explored topic of interest. However, the relationships between the stakeholders and organisations have been found to be very influential for the organisation’s wider environments. Among other things, these relationships have set the foundations for the creation of stakeholder interaction forms that are more responsible, highlighting the relationship between stakeholders and sustainability (Steurer et al., 2005).

In order to gain a better understanding of the relationship between stakeholders and sustainability, it is useful to consider the definition of sustainable development, which states that, from a corporate perspective, sustainable development refers to the adoption of business activities and strategies that meet the needs and expectations of both the organisation and its stakeholders while at the same time ensuring the protection, sustainability and enhancement of the natural and human resources that the corporation will need in the future (Roosa, 2010). This definition is narrower than the Brundtland and definition provided in section 2.2.1, and identifies clearly why it so important to understand all of the stakeholder groups that are involved with or have an influence on the organisation's management issues and practices related to the environment. This should be achieved through careful analysis and planning, again highlighting the need for the use of a strategic and systematic approach to stakeholders, which can be assisted by specific management tools (Sharma and Starik, 2004).

One of the tools that can be particularly helpful in the alignment and management of the organisation's stakeholders and the environment is the Balanced Environmental Scorecard. The Scorecard has been developed specifically to enable, assist and support the integration between organisational vision and strategy, stakeholder management and management of the environmental systems. The construction of the Balanced Environmental Scorecard places the focus on managing business activities that are related to the internal and external drivers of excellence in environmental performance. It enables the linking of sustainable development with environmental objectives and serves as a good foundation for incorporating a broader means for measuring the organisational performance (Laboy-Nieves et al., 2008), which in turn can be linked to the measurement of stakeholder satisfaction.

In general, the Balanced Environmental Scorecard sets the foundations for identifying the management challenges and opportunities for gaining competitive advantage. It also provides a framework for the systematic organisation of the environmental management activities so that they will be focused on proactive management and stakeholder satisfaction (Chai, 2009).

The first group of stakeholders identified by the Balanced Environmental Scorecard are the financial stakeholders, which are all those that have an interest in the organisation's financial performance. The Scorecard sets three main principles for

managing these stakeholders: focusing on the growth of sales and the increase of profitability, focusing on the reduction of costs and improvement of productivity and focusing on the maximisation of asset utilisation. The second group of stakeholders is the customers. The principles for managing customers include developing products that are benign from an environmental point of view, while at the same time ensuring competitive function, cost, style, and performance, minimising the impact on the environment from the use and disposal of the products, and educating the customers about the products' environmental benefits. The third group is comprised of internal stakeholders, which are the employees and management of the organisation. The principles for managing this group include the reduction of the resources used in the production, reduction of the wastes created during the production, encouragement of process and product innovation, and measuring and communicating these results. The four main groups of stakeholders also include those related to the community and public policies. Here, the principles for management are establishing open and honest communication, establishing a participatory and proactive role in the community life, establishing a self-audit process and ensuring the disclosure of environmental impacts and the accurate perception of the risks that the organisational activities pose to the environment. The last group of stakeholders is the biosphere. The principles for managing this group of stakeholders include using the land and its resources in a sustainable manner, preserving the integrity, health and well-being of the ecosystem, and maintaining the quality of the air and water (Bishop, 2013).

From a stakeholder perspective, the setting of these principles and their use in the process of managing the stakeholders clearly indicates the complexity and depth of the relationship between stakeholders and sustainability. In other words, stakeholder theory has evolved over the years from a theory for corporate strategic management to a more comprehensive theory which includes three perspectives: the stakeholder, the corporate and the conceptual (in this case sustainability). This has enabled the theory to address different facets of the relationships between business and society. According to Steurer et al. (2005), the sustainability approach of stakeholder theory should address three main issues: the economic, the societal and the environmental. The economic issue is important because being sustainable principally means that sufficient earnings are needed. The social issue includes the internal and external social improvements that affect and benefit the stakeholders. These can vary from compliance with human rights regulations to

building or supporting community events and centres. Finally, the environmental issue refers to responsible the use of natural resources, minimising emissions and any kind of pollution, and the avoidance of any type of environmental risk and damage. This is aligned with the use of tools such as the Balanced Environmental Scorecard mentioned earlier.

Overall, the relevance of using a stakeholder approach from the perspective of sustainability can be traced to the potential of this approach for explaining economic benefit while considering the environmental and social expectations of the stakeholders. If the stakeholders of an organisation expect it to be environmentally and socially responsible, there is an obvious need and a justified business case for sustainability. It is also important to note that sustainability-related stakeholder expectations have grown in interest and importance in the last several years, and it is expected that this trend will continue in the future (Quaddus and Siddique, 2011). With this in mind, it is crucial that both the stakeholders and their expectations are managed from an environmental perspective in order to ensure sustainability in general and the sustainable development of the organisation (Quaddus and Siddique, 2011).

2.4 Triple Bottom Line

2.4.1 Definition

The idea of the Triple Bottom Line (TBL) was developed by Elkington (1997) as a sustainability related model. TBL is an accounting framework that takes into consideration three dimensions of corporate performance: financial/economic, social and environmental. The three dimensions are also known as three Ps: profit, people and planet (Slaper and Hall, 2011).

According to Elkington (1997), the economic line of the TBL framework explains the effect of the practices of business organisations on the economic system. It relates to the ability of the economy as one of the subsystems of sustainability that must last and evolve so that it is able to support generations in the future (Spangenberg, 2005). The economic line relates the organisational success and growth to the growth of the economy, which means it emphasises the economic value that an organisation offers to the surrounding system in the way that it promotes and prospers in its ability to meet the needs of future generations (Alhaddi, 2015).

Elkington (1997) states that the social line of the framework involves the management of fair and beneficial business practices to human capital, labour and to the community (Hidayati, 2011). The reason why the social line was included in the framework was so that fair and beneficial business practices would provide value to the communities in which they operate and, in this way, business organisations would give back to communities (Alhaddi, 2015). Such practices may include the provision of health care coverage to employees and paying them fair wages. Being good to society is not only important because it is morally correct but, by disregarding their responsibility towards society, business performance will be affected negatively (Elkington, 1997). Examples in industry revealed that ignoring social responsibility might result in economic costs (Dhiman, 2008). Business organisations that do not take into account their responsibility towards society face negative reactions from the customers and society that act as a barrier to the organisational success. Goel (2010) states that the social performance of a business relates to the interaction between the organisation and the community and involves responding to issues that are related to employee relations, fair wages and community involvement.

Elkington (1997) also includes the environmental line in the framework. This line requires business organisations to be engaged in practices that allow businesses to operate without compromising resources for future generations. It refers to the efficient utilisation of energy resources and the minimisation of ecological footprints (Elkington, 1997). The environmental practices of an organisation have an effect on the sustainability of business organisations (Hidayati, 2011; Alhaddi, 2015).

Slaper and Hall (2011) redefined the TBL framework, using the terms profit, people and planet for the economic, social and environmental factors respectively, and naming them “the three Ps.” Krajnc and Glavic (2005) proposed an elaborative definition of TBL and explained it as the production of goods and services using systems and processes that conserve energy and other natural resources, are non-polluting, healthy for employees, communities and consumers, economically safe and viable and creatively and socially rewarding for all the people working at an organisation. Savitz and Weber (2006), on the other hand, explain the TBL as a framework that captures the significance of sustainability by assessing and quantifying the impact of business organisations’ practices on the environment and communities, including both its shareholder values and profitability and the human, environmental and social capital. All are in general agreement.

But the literature reflects inconsistency regarding the usage of the term 'sustainability'. For instance, a few studies have used the term to discuss the environmental factors primarily (Yan et al., 2009). Some studies have used sustainability to refer to the social line only (Bibri, 2008) while others have used the term referring to all the three lines: economic, social and environmental (Alfred and Adam, 2009). The TBL framework balances the importance of all three lines and places equal importance on each of them bringing more coherence into the model (Savitz and Weber, 2006; Elkington, 1997; Alhaddi, 2015). Comparing the study carried out by Elkington (1997) with other sustainability-related studies, the level of importance given to all the three lines is not always equal. For example, several studies integrated the economic line while defining sustainability, however, the notion of its significance stayed restricted (Collins et al., 2007).

Mabler et al. (2009) carried out an analysis over several sustainability-focused organisations belonging to different industries in order to assess the impact of environmental initiatives on the performance of the organisation. The chosen businesses were from industries including automotive, technology, food, media, chemical, retail and tourism. The research aimed to identify whether organisations that adopt sustainable business practices are in a better position to survive an economic downturn. Mabler et al. (2009) identified from this research that during an economic downturn, organisations with practices that are aimed towards protecting the environment and enhancing the social well-being of the business stakeholders while generating returns for the shareholders performed substantially better when compared to their industry peers. From the development of innovative environmentally-friendly products, such business organisations enjoyed financial advantages such as reduced operational costs and increased sales turnover (Mabler et al., 2009).

While there has been an extensive research carried out on sustainability, there is much less empirical research on the TBL framework and its application. The existing studies have focused on TBL from the perspective of accounting, finance and organisational behaviour. For instance, Hidayati (2011) carried out a qualitative study to develop an understanding about the extent to which the TBL framework can be utilised in implementing corporate social responsibility (CSR) programs in business organisations. Additionally, Ho and Taylor (2007) conducted an empirical analysis regarding the reporting of TBL. The study examined the degree of TBL reporting and evaluated how social, environmental and economic

issues are reported. Goel (2010) completed an empirical research study where he examined the development of TBL and its advantages, analysed the relationship between sustainable development and TBL and constructed a comparison of the indicators of TBL with those of sustainable reporting. Despite the limited research carried out on TBL, the research has identified all the three lines as relevant and significant.

2.4.2 Historical Development

The idea of Triple Bottom Line was developed and by John Elkington in 1994. Elkington believed that businesses should prepare three separate and different bottom lines. One of these lines includes the traditional responsibility of a business to generate corporate profit, which he identified as the "bottom line of profit and loss account" (Alhaddi, 2015). In addition to this, he identified the 'people account' as the second bottom line of the company, which includes how an organisation intends to act socially responsible in its operations. The 'planet account' was identified as the third bottom line, which is when an organisation measures and assesses how it operates in relation to the environment (Elkington, 1997). The framework was aimed towards the effective measurement of the financial, environmental and social performance of a business organisation over a period of time (Alhaddi, 2015) so that a business could take into account the full cost of doing business. This concept has gained popularity as the importance of climate change, fair trade and social responsibility has been recognised (The Economist, 2009).

After a period when many business practices prioritised cost-cutting, the hidden environmental and social costs of transferring the production of goods and services to low-cost countries like India, Brazil and China became apparent to the customers in the West (The Economist, 2009). These included exposure of issues like the excessive consumption of hydrocarbons and the exploitation of cheap labour. The increasing awareness of such practices exerted great pressure on a number of companies to consider changes in their business practices and policies and increase transparency over the ethical standards of their contractors and suppliers. Companies including Tesco and Nike re-examined their policies concerning suppliers and increased their supervision over their suppliers in countries such as Bangladesh and Mexico where the legislative framework is weaker, labour markets are unregulated and manufacturers are unable to comply with the environmental and social standards. During this time, the fair trade

movement grew substantially, which resulted in more products being produced and traded in a way that is socially and environmentally fair (The Economist, 2009).

Elkington in 1994 developed TBL as a new method to express what he viewed as an unavoidable growth of the environmental agenda (Henriques and Richardson, 2013). He realised that the economic and social dimensions of the agenda that had been highlighted in the Brundtland Report needed to be addressed in a greater integrated way so that real environmental progress could be achieved (Alhaddi, 2015).

Elkington (1997) believed that the focus must not only be on the economic value that a business adds, but also the social and environmental value they add and/or destruct. TBL line provided a way to measure and report over the performance of the business against social, environmental and economic parameters. It allowed capturing a set of values, processes and issues that businesses must focus upon to minimise the destruction to the environment as a result of their activities and creation of social, economic and environmental value (Henriques and Richardson, 2013). This requires being clear about the purpose of the organisation and involves taking into consideration all stakeholders' needs including governments, communities and general public. The concept of TBL was widely accepted during the late 1990s (Henriques and Richardson, 2013). In 2003 PricewaterhouseCoopers revealed the results of a survey that involved 140 American corporations (Henriques and Richardson, 2013). Through this survey, it was identified that ignoring the TBL results in disastrous results for business organisations. Today, an increased number of Fortune 500 companies carry out separate analysis and report over the company's contributions towards meeting the TBL in their annual reports.

2.4.3 Subsequent Development

As well as being accepted widely, the concept of the TBL has also experienced subsequent development initiatives in several regions. The model was used by several communities to encourage business organisations to place more importance on sustainable economic development growth (Henriques and Richardson, 2013). This was a challenge as it required cooperation among governments, non-profit organisations, businesses and the general public.

The concept of TBL was used and developed further in several regions in the United States (The Economist, 2009). In 2009, the Sustainable Cleveland 2019 Summit

was organised to bring together all the people who had an interest in applying the sustainability principles to the local economic system (Slaper and Hall, 2011). This was a big initiative towards creation of a sustainable economy in Cleveland by emphasising a concept via incorporating TBL. The focus was placed on measuring sustainability by focusing on four key areas: the natural environment, the social and personal environment, the built environment and the business environment. Every area had clear goals with measurement indicators. However, initially the measurement indicators were not fully developed so a dashboard was created that when combined, resulted in an index that was used to determine overall project success (Slaper and Hall, 2011).

The concept of TBL changed the way non-profits, governments and businesses measure sustainability and project performance. The framework not only resulted in the development of the three line – profit, people and planet – but the model's flexibility also enabled organisations to apply the framework in a way that suited their needs. However, over time, several challenges were also highlighted regarding the application of the framework in practice, in particular the challenge faced in measuring performance in each of the three bottom lines. Nevertheless TBL framework enables organisations to evaluate the difficulties and challenges of their decisions from a long-term perspective (Slaper and Hall, 2011). According to Seow et al. (2006), progress towards the challenges identified need to be highlighted and communicated to relevant stakeholders so that new learning can be generated and improvements along with remediation can take place. Seow et al. (2006) also stated that it is important to involve external stakeholders and the management in progress reviews, decisions and communications on course adjustment so that success and achievements are reinforced.

2.4.4 Support and Criticism

TBL is popular among management, investment, consulting and non-profit businesses. The concept that an organisation's success needs to be measured not only by considering the economic bottom line but also the environmental and social bottom line was widely accepted all over the world and enabled the organisations to fulfil their obligations towards all stakeholders (Rogers and Hudson, 2011). This is underpinned by the belief that organisations cannot operate successfully in the long run if the interests of the key stakeholders are disregarded. The novelty of the framework lies in the contention that the overall fulfilment of responsibilities to employees, communities, suppliers and customers should be assessed, computed,

audited and reported in the same way as the financial performance of the companies. The supporters of TBL believe that social responsibility and ethical business practices are significant functions of management and corporate governance (Rogers and Hudson, 2011).

The supporters of TBL have different views regarding the framework and its application. The supporters state that TBL is a very valuable and useful management tool as it enables an organisation to respond to all stakeholder demands and be accountable for their decisions to the society (Alhaddi, 2015). Furthermore, TBL acts as a warning tool which enables an organisation to responds to the changes in the behaviour of stakeholders quickly and integrates the changes into the business strategy (Henriques and Richardson, 2013).

The articles that advocate TBL are usually explicitly written to tell the readers about the concept and to sell the concept to them (Norman and MacDonald, 2004). However, these documents do not provide an extensive definition of the concept for the application and calculation of the bottom lines. Vague claims are usually obtained when looking for the clear objectives of the TBL approach (Milne et al., 2005).

Several researchers such as Zadek (2001) highlighted the usefulness of the TBL framework in terms of sustainable development. However, recent literature also critique the TBL framework (Archel et al., 2008; Henriques and Richardson, 2013; Milne et al., 2005; Zadek, 2001; Norman and MacDonald, 2004). The criticisms include that the framework encourages the economy, society and environment to be identified as three separate accounts instead of one. Furthermore, critics also state that the three lines of TBL are significantly different, meaning that a single model with a single unit and similar bottom lines is problematic. Criticism also notes that the framework implies that only what can be measured is important, reporting boundaries are not defined very clearly, the standard of reporting is not high and reporting is voluntary (Norman and Macdonald, 2004).

2.4.5 Implementation Issues and Barriers

There have also been some issues and challenges faced by the practitioners regarding the successful and effective implementation of the three bottom lines. Challenges have been identified regarding the measurement of progress towards attaining overall sustainability (Slaper and Hall, 2011).

Due to a variety of scales and projects to which TBL framework is applied, a universal measurement scheme could not be developed. An increased level of complexity can be faced when assessing the effects of projects that were aimed at achieving balanced performance. The literature has identified this as a major limitation of the concept. Slaper and Hall (2011) stated that defining TBL is not a big achievement – the concept will only be useful when TBL can be measured in the most effective manner. The challenge is to develop effective measures that are quantifiable, meaningful and comprehensive. Data availability has been identified as an important issue for the indicators of TBL. For example, Weber and Rahe (2010) stated that wealth creation is difficult to quantify as the data is not readily available in smaller regions. Additionally, as the TBL framework works parallel to different goals, it is hard to identify a unit of measurement that is common to all. There is no one universally accepted measure to calculate the impacts of the triple bottom line (Slaper and Hall, 2011). Hence, there is a need to develop indicators that are universally accepted and can be adapted to the diversifying needs of specific groups. This appears to be a gap in our correct knowledge.

2.5 The Economic Perspective of the Triple Bottom Line

The widespread concern with sustainability is linked with the TBL model (Alhaddi, 2015). It is based on the theory that in order for companies to be economically viable, it is essential for the management to reinvest their profits and monitor their impact and contributions on the social capital and the environment, as well as their products, profitability and traditional markets (Leal Filho et al., 2014). This section focuses on the economic dimension of the TBL framework.

Considering the economic perspective of the TBL framework, business organisations should make serious attempts to integrate environmental issues into their business strategic planning process (Ross, 2015). Their business strategy, operations and supply chain processes must all integrate sustainability and environmental concerns. The integration of sustainability into their processes means that businesses must utilise environmental technologies that would make them capable of shaping their business in a way that helps them to find practical viable solutions to the environmental issues that the global community is facing. Sustainability has significant effects on the economic decisions due to a number of reasons (Ross, 2015), including:

- *Sustainability concerns and good environmental management*: The concerns emphasise the efforts of the business to reduce waste, conserve energy, minimise carbon footprints and attempt to recycle wastes and other useable products.
- *The power of customer choice and public opinion*: These concerns are regarding the awareness of consumers about the preservation of natural resources and protecting the environment.
- *Potential for advantage over competitors*: These concerns focus on the implementation of sustainability practices to reduce costs and increase resource efficiency that enhance the financial bottom line and build a reputation of being eco-friendly.

The economic perspective of the model requires businesses to consider, research and assess the impact of environment-related concerns on their operations and how the adoption of sustainable practices create a positive impact on the long-term financial success of the business (Ross, 2015).

To obtain information regarding economic impact requires measurement in concrete quantitative terms (Henriques and Richardson, 2013). Various economic indicators can provide a picture about the present status of the business operations that can be used to identify whether the business is managed in a way supporting the vision that the economic perspective of TBL dictates. The government has an important role in ensuring that the right incentives are provided, proper regulations are imposed and laws are created so that the economic impact of the business can be maximised for society (Sridhar, 2012). Additionally, the present price structures do not allow a true reflection of the real costs, for example freshwater and clean air. Once way to deal with this problem is to start assessing the economic impact of a business, for example, seeing the impact of the business operations from an economic view. This is not very simple and there is no single method to be applied (Henriques and Richardson, 2013). Sridhar (2012) states that among the three important dimensions of the model, it can be said that the economic bottom line reflects the organisational success in meeting the needs of its owners i.e. the shareholders.

2.5.1 Understanding the Profit Dimension

The objective of maximisation of shareholders' wealth is considered to be the most desirable goal from the perspective of investors as well as the society. According to

Jensen (2001), shareholders' wealth cannot be ignored as it would result in the maximisation of society's wealth too. The corporate finance theory is also based on the view that the primary objective of a business organisation should be to increase shareholders' value. Empirical research also accepts maximisation of shareholders' wealth as an ideal and usual goal of a business and believes that its decisions must be based according to it.

The shareholders are the risk takers and have a financial stake in the business, therefore it is fair to generate a higher return for them. The literature suggests that generation of wealth for shareholders will also benefit society as the wealth will be created by the business after compensating all those who were involved as well as society for the consumption of resources (Crouch and Maclean, 2011; Jensen, 2001). Hence, by considering this view it can be said that from the economic perspective of the TBL framework, a business must generate profits to generate higher shareholders' wealth so that it not only meets the expectations of the risk takers but also benefits society. According to Crouch and Maclean (2011), an organisation achieves this objective when it maximises the market value of its value of shares along with all other financial claims such as its preferred stocks and debts.

2.5.1.1 Cost-Benefit Analysis

Cost-benefit analysis (CBA) has a very established theoretical foundation. It is a model that compares the losses and gains that are associated with a business decision, policy or an investment project so that effective decisions can be made (Adler and Posner, 2009). The gains in this model are regarded as the increments of human well-being, whereas the losses refer to the decrements caused to the well-being of humans as a result of a business decision, policy or an investment project. CBA has a long history. The foundations of the model were developed in 1853 by Jules Dupuit, with developments made over time (Adler and Posner, 2009). CBA defines the way in which costs and benefits should be measured and emphasises the principle that a decision must only be accepted if the benefits exceed the costs. CBA provides a procedure to carry out an evaluation of the social worth of a business decision, policy or an investment project. The most prominent features of the model are as follows (Adler and Posner, 2009):

- A benefit is referred to any increment in the human well-being whereas loss can be defined as a decrement in well-being.

- An increment in human well-being is a benefit that can be measured as to how much willingness an individual has to pay to protect that gain or to accept to forgo that gain in return for a compensation.
- A decrement in well-being refers to the cost which is measured by looking at the tolerance of an individual towards acceptance of the loss or their willingness towards prevention of that loss.
- Willing to pay and willing to accept helps to measure human preference.
- In the case of benefits exceeding costs, a business decision, policy or an investment project can be considered as worthwhile.
- Costs and benefits are stretched over time and, as individuals are more likely to prefer the present over the future, the future costs and benefits are discounted by selecting a suitable discount rate. Hence, the present value of benefits must be higher than the present value of costs.

CBA is based on the economic efficiency concept of meeting the requirements of a goal at the overall cost at least (Adler and Posner, 2009). Businesses must ensure that benefits exceed the costs and goals must be set such that maximum benefits can be attained over costs. CBA is a widely accepted technique as it provides a useful means of evaluating business decisions considering the consequences. Consideration of consequences before taking decisions, introducing new policies and opting for investment projects will enable businesses to make informed decisions and to achieve their primary objective of maximising wealth for the shareholders and benefiting the society in return, thus meeting the requirements of the economic bottom line prescribed by the TBL model (Campbell and Brown, 2015).

2.5.1.2 Post-Occupancy Evaluation

There are a number of interpretations that define post-occupancy evaluation (POE). The US Federal Facilities Council defined POE as a process which allows for the systematic evaluation of performance of buildings once they are built and occupied for a period of time (Preiser, 2002). According to Preiser and Vischer (2006), POE can be defined as a process that involves the systematic collection, analysis and comparison of data with performance criteria that are explicitly stated and related to the occupied built environments. Friedmann (Preiser et al., 2015) also described POE as an appraisal process that identifies the degree to which a designed building satisfies the needs and values of occupants implicitly and explicitly. From an architectural point of view, the Royal Institute of British Architects defined POI as a study of buildings to help architects gain access to information regarding the

design performance and users or occupants of the buildings so that they get the best of what they have (Mallory-Hill et al., 2012).

When POE evaluations were carried out during the 1970s and 1980s, it was primarily the performance of buildings that was targeted as the main area of concern. However, developments in the past two decades have shed some light on universal design evaluation (UDE) and building performance evaluation (BPE), focusing on a more process oriented and holistic evaluation (Preiser et al., 2015). This means that non-financial factors which might have an impact on the design of facilities were also brought into consideration.

There are a number of interpretations of POE. According to Zimmerman and Martin (2001), the benefit of carrying out a POE is the accessibility of valuable information that will support the objective of continuous improvement. Similarly, Whyte and Gann (2003) suggested that benefits of POE include the following:

- Effective application of design skills;
- Improvising of user requirements;
- Enhancement of commissioning process;
- Improvising of management procedures; and
- Provision of knowledge regarding regulatory processes and design guides.

The literature illustrates that POE offers a method of collecting and disseminating valuable information that is important for all stakeholders who are a part of building life cycle. Different elements of this information will be beneficial to different stakeholders in different ways (Preiser and Vischer, 2006; Volker, 2010). Hadjri and Crozier (2009) suggested that the task of workplace designing is not a finite process and does not end on completion of the building. Instead, it is an ongoing process which also involves refurbishment and upgrading of buildings too (Hadjri and Crozier, 2009). Hence, this implies the importance of carrying out evaluations such as POE. Zimring (2002) also stated that there is a direct link between organisational learning and POE. The objective of POE is to offer up-to-date information regarding the requirements of staff working in the building and their performance (Hadjri and Crozier, 2009). However, POE has also received some criticism from various researchers. For example, Vischer (2001) stated that adoption of POE has barriers in terms of time, cost, skills and defending

professional integrity. Zimmerman and Martin (2001) also suggested that POE does not have very reliable and agreed-upon indicators.

2.5.2 Measurable Performance of the Economic Perspective

Performance measurement is a process that enables an organisation to monitor its processes, systems and programs (Probst, 2009). The process involves the extensive collection of data that helps to develop an understanding about the capabilities of an organisation to manage its processes, systems and programs in the most efficient manner. The information collected during the process is then used to make important business decisions. It is important for businesses to measure performance, as the results indicate how the existing systems, programs and processes are working and how effectiveness and efficiencies can be optimised in the future by allocating resources successfully. The literature suggests that the indicators of performance must be measurable, quantifiable, understandable, relevant and timely (Probst, 2009). Hence, this section looks at the performance measures that can be used to assess the effectiveness of the company value chain. This section will discuss and propose performance measurement tools that will enable effective assessment of how the business organisation performs to meet the company's objectives and to what extent it is successful in satisfying its staff. The two models discussed below, payback period and workplace ecology index, result in the measurement of business performance in satisfying company and staff. It is accepted that there are alternative approaches.

2.5.2.1 Payback Period

The payback period (PP) indicates the number of years it takes to recover the initial investment that a business makes using net cash flows left after paying tax. Calculation of PP enables the business to compare with the minimum acceptable period, which is selected arbitrarily (Keown et al., 2011). The rule of PP is that if the computed PP is equivalent to or less than the criterion or desired period then the project under consideration will be accepted as it will take a short period of time to recover the initial capital outlay and the associated risk will be considered to be low. A shorter PP will always be considered better (Keown et al., 2011).

There are several advantages of using PP (Keown et al., 2011). Firstly, it is simple to compute. Secondly, if an investment project is opted on the basis of a quick PP then as the investment is recovered, the money can be re-invested back into other investment projects resulting in higher returns for the business. According to Gotze

et al. (2015), the PP method is very useful in evaluating investment projects and calculating annual return from the beginning of the project until the point when the accumulated net cash flows are equal to the investment cost (i.e. the payback period). Management that has concern about liquidity would focus on the importance of recovering investments rather than choosing investment options where the money will be stuck for a long period of time. Opting for an investment option with a shorter payback period would assist managers to minimise risk by recovering the initial investment as quickly as possible. Lastly, the concept of PP can be easily understood by non-financial managers and investors (Gotze et al., 2015).

However, the disadvantage of using this technique as a performance measure is that it involves equal weightage being given to all cash flows (Gotze et al., 2015). Furthermore, the technique does not allow for looking at the cash flows after payback and PP does not incorporate projects with different capital investments. However, it is suggested that some of the problems of PP can be overcome by using discounted cash flow in the computation of payback period. PP is considered to be useful if considered as a liquidity measure; however, it is less useful when profitability needs to be measured. There are several other methods available which can allow businesses to consider factors such as risk, difference in investment levels and the time value of money. Among these, the most commonly used methods include internal rate of return (IRR) and net present value (NPV) (Gotze et al., 2015).

Some projects may be vital for the long-term sustainability of the business. Using the PP method would mean that such projects may be rejected due to a longer payback period (Rohrich, 2007). Hence, researchers suggest that the PP method must be utilised more as a measure of liquidity rather than profitability. Due to its problems, PP is not used as a single primary method for evaluating investment options; rather, it is used with other investment appraisal methods. Usually, the PP method is appropriate for initial screening of investment options. Once the options pass the screening stage, a more advanced and time-consuming analysis is carried out through the application of detailed methods such as IRR and NPV methods (Rohrich, 2007).

2.5.2.2 Workplace Ecology Index (WEI)

The workplace can be referred to as a location which is shared and where people collaborate and interact in organisational settings (Vischer, 2005). It comprises a physical space along with business technologies and infrastructure. Workplaces are said to be considered as ecosystems which are essential for the successful achievement of business goals. Workplaces need to be conductive towards attaining and retaining knowledgeable workers, assisting them in carrying out their responsibilities in the best way possible (Vischer, 2005; Alkhawaja, 2015).

Studying the workplace ecology assists in suggesting ways to improve systems and processes and assessing their application in the workplace, enabling the identification of areas where improvements can be made and the assessment and overall rating of the workplace performance. The workplace ecology index (WEI) can be illustrated as shown in Figure 2.3

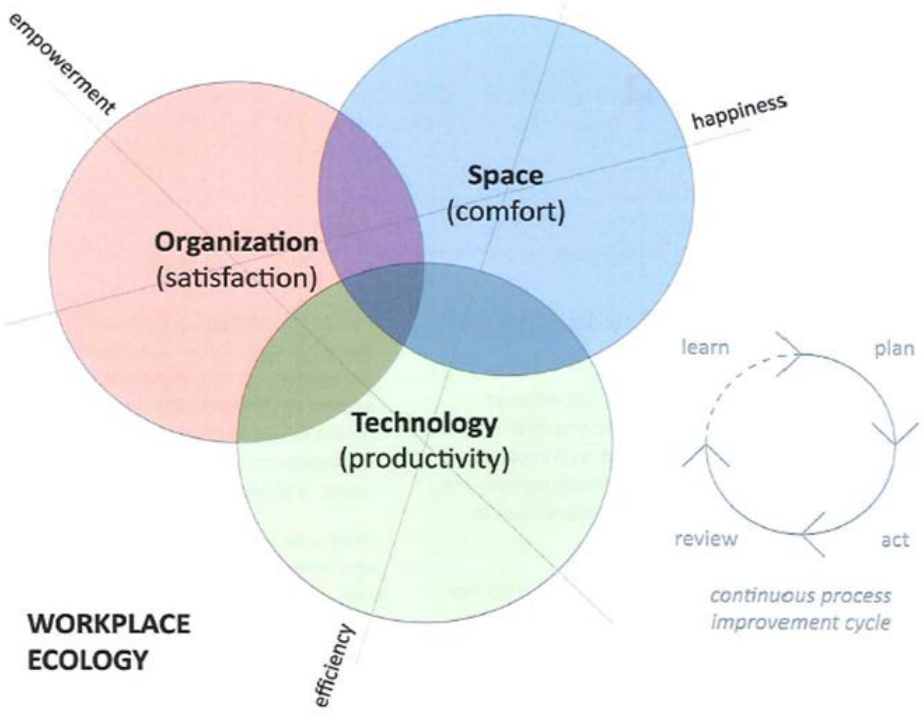

Figure 2.3 Workplace Ecology Index

Source: (Alkhawaja, 2015)

Organisation is one of the elements of workplace ecology. Organisation in this case refers to the workplace management and of its human resources policies. Organisational ecology (OE) is the study of life within an organisational setting. OE

is an empirical and conceptual approach that rests in the field of social sciences which itself is a significant part of organisational studies (Bakiev, 2012). According to Schwede et al. (2008), human resources are the biggest and most important resource for most organisations. It is very important for organisations to manage their human resources well so that they can enjoy sustainable progress. OE includes diversified aspects regarding organisation of human resources including performance reviews, line management responsibilities, conflict resolution, promotion, conditions of employment, communication, organisational values and remuneration (Schwede et al., 2008). Organisations need to engage with knowledgeable workers and ensure that they perform their jobs effectively. Dissatisfaction may result in problems for the workers as well as for the whole organisation (Baum and Amburget, 2002). Hence, OE is considered to be an important part of workplace ecology.

Space is identified as another key element of the workplace ecology (Alrazi et al., 2010). To attain a competitive advantage, it is important to use space in an optimal way as a huge proportion of expenses are related to business activity. To reduce occupancy costs, Vischer (2005) suggested that the business needs to carefully evaluate the way space is utilised and adopt strategies to ensure it is used efficiently. If the impact of accommodation on organisations is misunderstood, businesses can face high costs due to inefficiencies in building utilisation and space planning. With appropriate redesigning and sizing, the workplace can have a positive impact on the work performance and enhance efficiency (Damian, 2004).

Technology is another element of the workplace identified by Alrazi et al. (2010). The utilisation of technology in the workplace has resulted in effective management of time and money for organisations leading to huge savings (Lai, 2011). Among the advancements in technology, the automation of the administration processes of organisations has been a key development in this area, as the management of administration was a major expense for all organisations. The computerisation of administrative functions resulted in significant time savings related to the collection, processing and disseminating of information (Bresnahan et al., 2002). It also enabled reduction in the margin of error that was associated with the manual data entry. Another development resulted in the establishment of computer networks, which allow businesses to share information throughout the organisation in real time. Businesses became more flexible as a result of these advancements (Bresnahan et al., 2002).

Thus, it can be said that workplace ecology is an area which enables the development of understanding regarding how the levels of comfort, productivity and satisfaction can be improved in the modern built environment. Bresnahan et al. (2002) suggested that the health of a workplace ecosystem is measurable and can be quantified at the individual occupant level. The result can be transformed into a star rating so that different organisational settings can be compared over time.

2.6 The Social Perspective of the Triple Bottom Line

The concept of corporate social responsibility (CSR) and the integration of TBL into corporate strategy are gaining popularity. However, there is still confusion over what the social dimension of the TBL framework comprises. Elkington (1997) stated that this dimension requires the assessment and measurement of the organisation's impact on the social systems of the communities in which it operates, whether it is a local, national or global level. Researchers hold different views regarding the definition, measurement and reporting of an organisation's social impact (Suggett and Goodsir, 2002). Globally, there are various standards that can help in measuring the social dimension of TBL. After reviewing the four most popular frameworks that outline guidelines and indicators in the social category, the Global Reporting Initiative (GRI), sustainability metrics of the Institution of Chemical Engineers, the United Nations Commission on Sustainable Development Framework (UNCSD) and Wuppertal Sustainability Indicators, Labuschagne et al. (2005) developed a Corporate Development Index. This Index was based on the effectiveness of labour conditions and industrial relations as well as the maintenance of human capital (Labuschagne et al., 2005). This section discusses the social dimension of the TBL framework with respect to the extent to which it meets the needs of the people working within the business.

2.6.1 Understanding the People Dimension

During the 1950s, businesses had their primary focus on making profits and any business that provided their employees with a regular paycheck were considered a good employer at that time. In modern times, with the increasing popularity of TBL reporting, large businesses are taking interest in assessing the economic, social and environmental impact of their operations. Societal expectations of businesses have increased and social initiatives are appreciated and supported. The Millennium Poll examined the social responsibility of businesses in 33 countries (Birch, 2002). After surveying 1000 citizens from each country, it was identified

that corporate social responsibility of businesses is an expectation at a global level (Birch, 2002). Tschopp (2003) also argued that businesses that publish social reports taking into consideration the social dimension of the TBL framework do this for two reasons: due to demands from investors and to attain positive publicity and recognition for their actions.

There is no quantitative measure for the social impact of organisations, which is why difficulties are faced in understanding what the social perspective should include (Mullerat, 2010). According to a report on TBL measurement and reporting in Australia, businesses revealed that there is no best way to indicate and measure non-financial outcomes (Mullerat, 2010). Hence, it is difficult to report on them. Moreover, approaches are preferred that integrate the commercial logic and objectives of businesses (Suggett and Goodsir, 2002). It is also difficult to make comparison between businesses as the social indicators are self-selected by the businesses, making it misleading to compare across industries or organisations. These challenges are faced when looking at the social dimension of the TBL framework, as this dimension is based on internal judgment and is qualitative in nature.

The present consensus is that publishing a social report is more related to public relations, market positioning exercises and effective marketing than actually for the benefit of society (Gray and Milne, 2004). However, the Global Reporting Initiative (GRI), which was established through the environment program initiated by United Nations (UN), developed Sustainability Reporting Guidelines which were credible, comparable and globally applicable (Global Reporting Initiative, 2002). This is the most popular and widely accepted framework for integration of sustainability into corporate strategy. The guidelines define the social dimension of the TBL framework as the impacts of organisation on the social systems in which it exists and operates. The framework identifies four social indicators of performance: labour practices, human rights, safety and product responsibility. The framework also provided the following subcategories under each type of performance indicator as shown in Table 2.5.

Table 2.5 Social Indicators of Performance

Labour Practices	**Human Rights**
• Employment • Health and safety • Labour/management relations • Diversity and opportunity • Training and education	• Non-discrimination • Strategy and management • Child labour • Freedom of association • Collective bargaining • Forced and compulsory labour
Safety	**Product Responsibility**
• Political contributions • Bribery and corruption • Community	• Product and services • Customer health and safety • Respect for privacy

Source: (Global Reporting Initiative, 2002)

2.6.1.1 Market Analysis

Market analysis refers to the detailed examination of a company's customers, competitors, environment and the industry (Clow and Baack, 2009). Such analysis assists the marketing team to identify their target markets, decide which products to make or services to supply, determine the best promotional approach and understand the purchasing behaviour of the customers. Such assessments have been carried out by successful companies like JCPenney and Starbucks (Clow and Baack, 2009). Starbucks's owner was able to capitalise on changing attitudes and consumer behaviours that enabled the company to identify the niche in the coffee market that had high competitive rivalry. JCPenney used market analysis to identify that consumer attitudes were changing towards store brands, so they changed to private jeans labelling. This timely decision which occurred as a result of market analysis enabled the company to protect its market share at the time when its competitors were losing it (Clow and Baack, 2009).

Market analysis comprises environmental analysis, the analysis of product positioning, competitive analysis, customer analysis and market segment analysis (Kotler and Keller, 2011). Environmental analysis is an important part of market analysis and involves studying the movement of all the external variables that may have an impact on the industry in which the business operates. The assessment includes consideration of many factors including social, political, economic, environmental and technological forces. Competitive analysis enables identification of industry trends, failure of which may result in loss of customers to competitors. Competitive analysis involves continuous monitoring of the current and anticipated trends within the industry, which allows businesses to establish and maintain a strong competitive edge in the market (Clow and Baack, 2009). Additionally, product positioning analysis is another key technique of market analysis that helps the business to assess the perceptions of customers towards different brands in the industry and identify how their brand is perceived by the market or how they want their brand to be perceived by the customers. To attain a strong competitive edge in the market, it is important to position the product in the correct way (Kotler and Keller, 2011). Thus, product positioning analysis is used to develop an effective positioning strategy for business' products or services.

Another technique that assists businesses in positioning their products or services is market segment analysis (Clow and Baack, 2009). Market segmentation is a widely adopted marketing technique which enables businesses to study the market, classify customers into groups based on shared characteristics and target products/services to a certain type of customers only (Zimmerman and Blythe, 2013). Markets can be segmented in various ways, for example using demographic factors, psychographic factors or geographical factors. Lastly, customer analysis involves developing an in-depth understanding of the profile of customers that the business aims to target by producing a product or service. Such analysis enables businesses to understand their customers well and produce a product or provide a service in line with their needs and resulting in the attainment of a sustainable market share. All of the techniques described above enable businesses to develop an in-depth understanding about the market, customers and the competitors that will in return help them to develop sound strategies to attain and maintain competitive advantage in the marketplace (Kotler and Keller, 2011).

2.6.1.2 Community Liaison and Engagement

A community is defined as a group of people who live in a specific area/region. Stakeholders are those people who are interested in a particular decision as individuals or groups of individuals (Smith, 2014). Applying this definition of stakeholders, it can be said that local communities can be considered as business stakeholders. Taking local communities into consideration is an important aspect of the social dimension of the TBL framework (Murphy, 2012). Smith (2014) suggests that a business must contribute towards the social development of the communities in which it operates and engage them through open consultation processes (Smith, 2014).

The support of communities is required to carry out business operations without any barriers. In addition to that, workers may choose to only work and stay with business organisations that are good corporate citizens (Minerals Council of Australia, 2005). Companies which are perceived as responsible citizens are more likely to gain the support and trust of communities. By engaging communities, companies will also be able to identify emerging issues within a community at an initial stage and resolve them proactively (Renner and Cross, 2008). The process of engaging communities can be both challenging and beneficial at the same time. As communities are dynamic and complex, they can react in a number of ways to the efforts of companies who are engaging them. There is no guarantee that a method that worked in one context will work every time. There is no good or best practice. Businesses have to take long-term view and carefully plan how to go about it. The International Association of Public Participation (IAP2) explains community engagement as a process as shown in Figure 2.4 below:

Figure 2.4 International Association of Public Participation (IAP2)

Source: (Harvey and Brereton, 2005)

At the beginning, community engagement may not be more than a basic interaction with the local community (Harvey and Brereton, 2005). This might involve disseminating information about the business operations. Business often use means such as newsletters, information booths, media releases and websites at this stage. These techniques are used just to provide the community with the basic

information. As the process moves forward, a direct interaction takes place. At this stage, consultation may be carried out to assess areas of opportunity and risk. This interaction is generally through discussion groups, surveys, public meetings, focus groups and polls. The process becomes more than information-gathering as it moves forward (Harvey and Brereton, 2005). Later in the process, two-way interactions take place, where the business attempts to involve and collaborate with the communities through interviews, community consultative committees, discussion groups and workshops. At the end, empowerment means that the engagement has been extended towards participation in strategic planning and decision-making (Harvey and Brereton, 2005). Overall, this sequential process will enable businesses to engage communities effectively and manage business operations in an effective way.

2.6.2 Measurable Performance of the Social Perspective

As evidenced above, the performance measurement tools and indicators of the social dimension of TBL are still unclear. Various guidelines and models have been developed globally that propose different ways in which business organisations can measure the performance of the business considering the social impact on their customers and community. This section proposes tools that would enable the measurement of the performance of the social perspective in these contexts. In this dimension, performance is measured using the customer loyalty index and corporate social responsibility. It is accepted that these are alternative approaches.

2.6.2.1 Customer Loyalty Index (CLI)

Customer loyalty is defined as the behavioural and attitudinal tendency to give preference to one brand over all others, whether because of satisfaction with the purchasing of a product or service, its performance or convenience, or simply comfort and familiarity with the brand (Nordman, 2004).

Customer loyalty is a most commonly acknowledged and accepted concept and is known for its importance in the creation of successful businesses (Kotler and Armstrong, 2008). The literature suggests three main measures of customer loyalty: behavioural, attitudinal and combinational loyalty measures. Kotler and Armstrong (2008) stated that customer loyalty is a very important objective for a business's survival and growth. They believed that obtaining a loyal customer base is not only a key marketing goal but also an important foundation for developing a sustainable competitive edge in the market. The literature also suggests that the success of a

brand can only be achieved in the long term when the customers become regular buyers of its products. However, the literature notes the high costs associated with the attainment of a strong and loyal customer base (Chiou and Droge, 2006). According to Bolton et al. (2004), it is important for businesses to understand how customer loyalty can be cultivated or retained if it is to deliver long-term organisational profitability and success.

Lemon et al. (2002) highlighted the benefits of obtaining customer loyalty and suggested that businesses can save on marketing costs significantly if they enjoy loyal customers, as it is less costly to serve loyal customers. Berens et al. (2007) identified that customer loyalty has a positive impact on corporate social responsibility (CSR). Customer loyalty is based on the attitudes and behaviours of customers towards a brand and repeat purchasing behaviour. The marketing literature recognises the importance of the integration of both behavioural and attitudinal dimensions of loyalty measurement in examining customer loyalty (Lemon et al., 2002).

2.6.2.2 Corporate Social Responsibility (CSR)

The foundation of the concept of corporate social responsibility lies back in 1917 when it was announced by Henry Ford that the aim of the Ford Motor Company was to do the maximum for everyone, to make money and utilise it, provide employment and provide cars that can be used by people and make money incidentally (Lee, 2008). After eighty years of the announcement of this objective, the grandson of Henry Ford, William Clay emphasised that the Ford Motor Company values all of its stakeholders along with the social interest of shareholders and its employees. The company revealed its intentions to offer ingenious ways to impress customers, generate returns for shareholders and contribute significantly towards making this world a better place (Hopkins, 2012). Hence, Ford initiated the social responsibility activities from a business perspective. Literature also values the work of Bowen when discussing the concept of corporate social responsibility as he discussed the relationship between a business organisation and society by prescribing Bowen's Social Responsibilities of the Businessman (Bowen, 2013). Bowen (2013) argued that businesses need to be aware of business ethics to be able to meet long-term performance goals. The literature highlights the importance of CSR initiatives and links it with the business ethics and long-term financial position of the business (Maignan and Ferrell 2004). Godfrey et al. (2009) stated that CSR practices act like insurance

cover and protect the business in the occurrence of negative events by minimising damage. Sen et al. (2006) stated that adoption of CSR practices do not only result in sales growth but also affect the investment and employment domains. Businesses that are known for being responsible citizens will enjoy sustainable competitive advantage and they will be able to attract more talented people due to the strong reputation gained in the market (Carmeli, 2005).

Bowen (2013) defined CSR as the social obligation which involves adopting those policies, determining those strategies, making those decisions and following those plans which are desirable and acceptable in terms of the values and objectives of society. This formed the basis for future developments. In 1979, in a major contribution regarding defining and understanding CSR and subsequent developments, Carroll prescribed four stages of CSR development: economic, legal, ethical and philanthropic obligations (Lober, 2011). Economic obligations reflect the companies' duty to provide the products and services that are needed by society and generate a profit from it. Legal obligations mean that the businesses must comply with legal rules and regulations. Ethical obligations is the expectations of society beyond the legal requirements, whereas philanthropic obligations reflect the fact that these roles are voluntary and fulfilling them is entirely based on the business's desire and not required by law (Lober, 2011). This model explains the four levels of social responsibility that are expected from a business by society.

2.7 The Environmental Perspective of the Triple Bottom Line

During the 1960s and 1970s, it was widely accepted that the activities of humans including business activity, have significant and potentially disastrous implications on the natural environment (Brown et al., 2006). The activities of corporations and business operations affect the natural environment in many ways. As the importance and demand for clean water, pure air, fewer toxins and several other benefits of environmentally friendly corporations and stewardship increase, there have been improvements regarding the environmental behaviour of organisations. During the 1990s, researchers began to think about the environmental movement, with corporations addressing environmental sustainability. Without looking at the specific sustainability initiatives carried out by corporations, it is important to note that business organisations did start to accept the notion of a sustainable development and their relationship to it. However, during the mid 1990s, the number of organisations giving importance to environmental sustainability

increased significantly and various scholars made an attempt to deal with and address the issues of sustainability (Brown et al., 2006). The environmental perspective of the TBL model emphasises environmental sustainability and encourages organisations to operate in a responsible way such that the natural environmental is not adversely affected. This section further discusses the environmental perspective (the planet dimension) of the TBL framework.

2.7.1 Understanding the Planet Dimension

The natural environment underpin of all life that exists on the planet. Without the natural environment, there is no possibility of life. Lack of concern towards the natural environment can result in environmental disasters and loss of habitat. Some well-known incidents include the Fukushima water contamination, BP Deepwater and the 2014 Chinese smog crisis (Coyle and Simmons, 2014). Considering the occurrence of these events, it can be said that the present global and national legislative frameworks are inadequate in providing protection for the ecosystem around the globe. Poor environmental management results from focusing on short-term temporary solutions (Coyle and Simmons, 2014). Environmental sustainability has strong associations with sustainable development that address the behaviour of corporations and how environmental management strategies are deployed as tools for enhancing a company's image and their profits. The TBL framework requires businesses to assess their organisational success according to three perspectives, including the environmental perspective. The framework suggests that a balance should be achieved to maximise benefits while still considering all the three perspectives (Henriques and Richardson, 2013). The literature suggests organisations should engage in proactive behaviour when dealing with the environmental issues that exist within communities (Sen et al., 2006).

According to Lyon and Maxwell (2004), corporate environmentalism is the way a business organisation explains its relations with the natural environment, incorporates this relationship into its planning and implementation procedures and reflects on its overall strategy in a number of environmental situations. The planet dimension of the TBL framework refers to the actions of organisations towards the environmental issues (Henriques and Richardson, 2013). The actions can be affected by legislation and concern of the public (external factors) or the desire of the business to attain a sustainable competitive advantage (internal factors). Some consequences of corporate environmentalism include a positive corporate image, a

strong competitive advantage and a loyal customer base (Lyon and Maxwell, 2004). Such commitment towards corporate environmentalism may require a higher investment from the company into research and development. Such investment is important so that niche products can be developed and the most efficient production methods can be identified. The research also results in the development of green products which incorporate cost, energy conservation and waste reduction. As modern society values environmental concerns, businesses that commit towards the satisfaction of these needs can get hold of a significant niche market that will not only establishes a positive image but also becomes an important source of competitive advantage (Lyon and Maxwell, 2004).

2.7.1.1 Benchmarking Best Practice

Benchmarking has a number of definitions and the key themes covering all the definitions include comparison, measurement, identification of the best practices, continuous improvement and implementation. One of the most accepted and frequently cited definitions of benchmarking defines it as a process where a business organisation seeks the best industry practices so that their implementation can result in exceptional performance (Attiany, 2014). The literature suggests that benchmarking practice may require a considerable investment as it needs resources as well as a significant amount of time. There are many factors that have been identified as important when considering benchmarking. These include flexibility, a customer-centric approach, continuous improvement, openness to change, sharing of information and management support (Attiany, 2014). According to Singh et al. (2012), benchmarking allows businesses to search in a systematic manner for best practices, bring in new ideas and implement operating procedures that are highly efficient. Singh et al. (2012) stated that benchmarking results in significant learning and helps businesses to improve on a continuous basis, which in return enables them to develop a strong customer base.

The benchmarking process has evolved from a systematic evaluation process to a continuous process of learning and implementation of best practices to attain competitive advantage in the market. However, Anand and Kodali (2008) suggested that benchmarking frameworks need to offer flexibility so that the can meet the individual needs of businesses. The model that a business chooses for implementation of benchmarking must be basic and clear. The main aim of the

benchmarking process is to explain the steps that a business must carry out when performing benchmarking (Anand and Kodali, 2008).

The literature has suggested various models of benchmarking that describe different set of steps that companies may follow when practicing benchmarking. Among the models, the Xerox benchmarking process is frequently cited. The Xerox model of benchmarking is illustrated in Figure 2.5 (Attiany, 2014; Anand and Kodali, 2008).

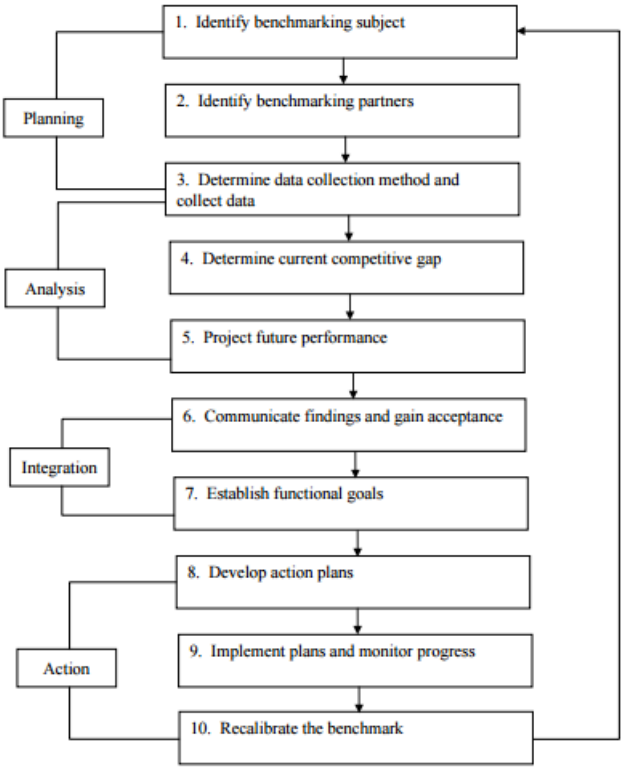

Figure 2.5 The Xerox Model of Benchmarking

Source: (Attiany, 2014; Anand and Kodali, 2008)

In the Planning phase, the business attempts to identify the subject of benchmarking (Attiany, 2014). The aim of carrying out benchmarking is to improve the present operations, implement new ideas and innovate to obtain operational excellence and competitive advantage. Once a benchmarking subject is identified by a business, the business then identifies the benchmarking partners. The theory of benchmarking suggests that it is not effective to consider too many benchmarking partners, as this will make the process complicated and will reduce the overall effectiveness of carrying out benchmarking. After identifying

benchmarking partners, the next step is to collect data on how those partners obtained operational excellence. The collection of data about benchmarking partners is a challenging process and information may be difficult to obtain. This collection of data initiates the learning process within an organisation, as at this stage the business identifies how its benchmarking partners have achieved excellence in their operations and what are their best practices (Attiany, 2014).

The analysis phase begins when the business analyses the information it collected about the best practices of its benchmarking partners and identifies the competitive gap (Attiany, 2014).

The integration phase of benchmarking involves learning from the findings of the analysis phase, setting new objectives and strategies and communicating those findings to all working in the organisation (Attiany, 2014). The communication is carried out in a two-way channel between the management and the staff members, as it is an initiation of the change process and acceptance from the workforce is a key to its success. The new objectives will be set and communicated throughout the organisation (Attiany, 2014).

The action phase involves developing action plans to achieve the new objectives that were set at the integration stage and implementing those plans in practice (Attiany, 2014). Once the plans are implemented, the progress is monitored and compared with the new goals. The comparison of results with the goals will indicate how successful the business was in benchmarking its partners and achieving operational excellence (Attiany, 2014).

Attiany (2014) identified a strong correlation between the continuous improvement process and benchmarking. Benchmarking is recognised as a competitive tool that enables businesses to cut across diverse industry including banking, education, construction, aviation and manufacturing. The tool has gained acceptance globally as a means of continuous improvement and as a means of enhancing competitiveness in the context of total quality management. However, Dervitsiotis (2000) identified serious limitations of the process if the tool had to be utilised by a business that is undergoing a paradigm shift. Similarly, Ungan (2004) stated that several companies carry out benchmarking and the adoption of best practices did not meet expectations. He assessed the factors that have an effect on the adoption of the best practices and classified them into three categories: organisational, best

practice and environmental factors. Anderson and McAdam (2004) noted that benchmarking in the past has occurred at a stage that is more downstream, meaning operations involved in selling products/services to customers. Instead, benchmarking must occur at the upstream elements of the business such as the input or process stage. This indicates that it is important for the benchmarking process to evolve.

2.7.2 Measurable Performance of Environment Performance

Performance measurement is important in all three areas of TBL. This section focuses on the tools that can enable the measurement of environmental performance. Government and 'the environment' are important stakeholder groups with different and sometimes competing agenda. The section proposes a means of assessing the extent of influence and leadership within organisations as well as a long life, loose fit and low energy framework for built infrastructure considering the environmental dimension. It is accepted that these are alternative approaches.

2.7.2.1 Extent of Influence and Leadership (EIL)

Leadership can be explained as the ability of an individual to influence, convince and persuade others so that the desired objectives can be achieved successfully (Northouse, 2004). Businesses enjoy success when they have the support of an inspiring and strong leadership, as it assists in achieving objectives effectively. Leadership provides a clear direction and vision to others and enables followers to look ahead and understand what is expected out of them (Fry, 2003; Agle et al., 2006).

There are various theories based on leadership and various models to explain how leadership works in literature. The most commonly accepted theory of leadership is that of transactional versus transformational leadership (Dionne et al., 2004). Transactional leadership is based on the exchange concept that considers an exchange relationship between a leader and their followers. It suggests that the followers comply with the leader in exchange for rewards and appreciation. Transformational leaders, on the other hand, enhance the level of consciousness of the followers and lead by example (Dionne et al., 2004). From the environmental perspective, a business that adopts sustainable practices and makes significant efforts to protect the natural environment acts as a leader for others. They are leading by example and are likely to have a significant impact on other businesses. Such influence will encourage other businesses to integrate sustainability into their

strategic planning process and focus on the environmental dimension of the TBL framework (Dionne et al., 2004).

2.7.2.2 Long Life, Loose Fit and Low Energy (3L)

Murray (2011) noted that the idea of constructing facilities that are durable and at the same time incorporate flexibility to meet future changing needs along with the ability to minimise energy footprint throughout its life are very important yet challenging objectives for an architect. These objectives can be simply summarised as durable adaptable, and sustainable. Good architecture must reflect on these three qualities, not only thinking of the facility as a work of public art or financial asset. Good architecture should incorporate the needs of future generations and benefit society throughout its physical life (Brandon and Lombardi, 2010).

In line with this view, Gordon (1972) developed the 3L Principle. He defined good architecture as one that satisfies objectives of: long life, loose fit and low energy. Long life, is related to the term durability and includes all practices which extend the physical characteristics of buildings and reduce ongoing maintains and premature decay (Langston, 2014). Loose fit, the second principle, is defined as the structuring of the building in a way that makes it adaptable and flexible to situations that cannot be predicted during the design process. Lastly, low energy is concerned with sustainability and involves taking measures at the design stage such that the building contributes towards the reduction of greenhouse gas emissions and pollution (Brandon and Lombardi, 2010; Langston, 2014). Gordon treated durability, adaptability and sustainability as equally important (Conejos et al., 2013). The model has been widely accepted when determining if a building meets the characteristics of good architecture. However, the research in this area is limited (Murray, 2011).

2.8 Conclusion

The chapter explained that “stakeholder” refers to any constituency that can affect organisational objectives or is affected by organisational objectives, and highlights the importance of keeping stakeholders happy. A number of theoretical concepts were discussed including the stakeholder approach, stakeholder theory and stakeholder engagement. The role and importance of stakeholders were identified and it was noted that the stakeholder engagement process promotes the developing of shared goals and collaboration and it is very important to consider the interests of all.

A complete overview of the concept of sustainable development and the importance and application of the TBL framework was also provided in this chapter as it sets the scene for stakeholder engagement and satisfaction. The TBL framework can be used to measure the success of business in maintaining sustainable operations and achieving their behaving responsibly. The chapter discussed all the three dimensions of sustainable development: social, environmental and economic.

The main outcome of the review of literature in the domain is that there is support for a TBL approach to assessing organisational decisions, but there is a lake of agreement about how this might be measured. This knowledge gap can be reduced via the development of a new model that combines economic, social and environmental parameters and applies it to a range of typical stockholder groups using a novel and objective method of assessment. The next chapter discusses the adopted research plan for delivering this outcome. However, the methodology chapter comprises a number of sequenced but interdependent steps.

CHAPTER 3:
Research Methods

3.1 Introduction

This chapter describes the methods that are used in this research study to achieve the objectives and outlines the procedures that describe, elaborate, explain and forecast phenomena. Research methods are the various algorithms, schemes and procedures that are used in a particular research study to fulfil the stated aims. They can include experimental studies, theoretical procedures, statistical approaches and numerical analysis. It is important to decide what research methods will be used prior to undertaking research as they will help to collect data and samples in the most effective way, resulting in finding a solution to the problem at hand (Rajasekar et al., 2013).

This research is based on finding and assessing the link between stakeholder satisfaction and organisational decision-making. The research methodology will enable planning how this will be achieved, at the methods chosen to answer the research question, the accuracy and suitability of the methods and the reasons for their selection.

This chapter is structured as follows. This first introductory section states the purpose of the chapter and provides an outline of the remaining content. Section 3.2 identifies the knowledge gap on measuring organisational performance and combining the various sustainability criteria into a common perspective, while Section 3.3 provides a detailed and systematic discussion of the grounded theory method. After that, Section 3.4 describes the case study and the data collection methods used in this research. After that, Section 3.5 outlines the need for group

consensus measure methods, including the expert panel and focus group. This part also explains the analysis strategy used for analysing the data in this study. This chapter concludes with Section 3.6, which summarises the analysis and findings of the previously mentioned sections and subsections.

3.2 Knowledge Gap

Businesses need to operate efficiently in order to be successful and sustainable. In the past few decades, various industries have attempted to integrate sustainability into the operations of their business organisations (Wilding et al., 2012). Various efficiency initiatives have been adopted by organisations around the world to incorporate sustainability into corporate strategy and achieve stakeholder satisfaction (Auramo et al., 2004). In these attempts and developments, the concept of sustainability is extended beyond the profit/economic dimension to the social and environmental dimensions (Wilding et al., 2012). Business organisations are now expected to take into account the social and environmental impacts of their decisions as well as the economic impact. These three dimensions of sustainability – social, environmental and financial – are a modem paradigm. The implementation of these three dimensions enable organisations to be more accountable to their stakeholders (Crum et al., 2011).

The increasing importance of the three dimensions of sustainability, as highlighted in the literature, has encouraged many businesses around the world to change their vision and strategic approach. Many studies have been conducted that additionally address the social and environmental dimensions of sustainability. However, there is still confusion over the performance measures that business organisations must use to evaluate the success of their sustainable operations (Kainuma and Tawara, 2006). Mechanisms to identify the quantitative tools that can be applied by organisations to measure the economic, social and environmental aspects of business' sustainability performance are difficult to identify (Wilding et al., 2012).

Delai and Takahashi (2011) attempted to identify some sustainability measure initiatives, however they found that there is no single initiative that deals with all sustainability issues and there is no consensus regarding what should be measured and how. Seuring and Muller (2008) concluded most of the measures used for sustainability are not based on an actual definition of performance, and

thus the three aspects of TBL are not addressed (Cox, 1999). Furthermore, economic sustainability can also be extended and may include revenue-sharing and various other aspects (Seuring, 2013).

As this brief discussion identifies, there is no viable framework in the literature which can enable the effective measurement of all of the sustainability issues arising from and supporting the relationship between sustainability and stakeholders' satisfaction. The models in the literature often have a common characteristic of not being objective and measurable (Bell and Morse, 2013; Szekely and Dossa, 2014). Measuring sustainability is a complicated task and forms the crux of the knowledge gap in this domain. There is a need to develop comprehensive sustainability performance measures that consider all the three of the dimensions of sustainability that can be applied by business to measure their progress towards sustainable organisational decision-making. The example taken in this thesis is the decision of processing built facilities to support the organisation's activates, thus creating a system boundary within which the research can take place.

3.3 Grounded Theory

This research is based on the grounded theory method. Grounded theory is among the most widely used research designs globally. In grounded theory, rather than collecting data to test an existing theory, a new theory is generated from data provided (Bryant and Charmaz, 2007). Grounded theory is derived from qualitative data sources and interpretive research methods, which offer unique benefits to the researcher. It represents an inductive methodology for theory discovery that allows for the development of a theoretical account of general characteristics of a certain topic while at the same time anchoring the account in data or observations gathered empirically. It provides a detailed and systematic method for analysis introducing the advantage of conceiving preliminary hypotheses. Therefore, grounded theory provides greater freedom to the researcher in terms of exploring the research area and allowing for the emergence of various issues (Jones and Alony, 2011).

In order to define grounded theory, it is necessary to consider several different perspectives. Charmaz (2006), considered grounded theory as a specific philosophical stance, a set of flexible guidelines or procedures or a specific logic of

inquiry. What this implies is that the properties that define grounded theory reside in attributes that are external to both the research process and the researcher. On the other hand, grounded theory is an open-ended method which relies on processes that are emergent, and it is the construction of concepts of the researcher that shape both the product and the process.

The Sage Handbook of Grounded Theory identifies the characteristics of grounded theory as the coding and classification of data, collection and analysis, producing memos, theoretical sampling, the usage of deductive and inductive logic to carry out comparative analysis, theoretical sensitivity, intermediary coding, identification of a core category, theoretical saturation and integration (Bryant and Charmaz, 2007). The methodology used in this research comprises the following separate but interdependent stages:

1. Literature review of integrated sustainability modelling

Several theories are identified and discussed in the literature related to research topic of sustainability, providing guidance for this study and enabling a good understanding of the areas that this research aims to focus on. Recognising the theories developed by various scholars and researchers in the past not only increases knowledge of the state of play in this field but also enables insight from other disciplines to be incorporated. The literature review helps to identify the underpinning theory and forms a foundation upon which to build new ideas and hypotheses.

2. Reviews research of stakeholder satisfaction and TBL

This stage involves looking at examples of stakeholder satisfaction models and related tools that have had some success in measuring organisational performance across all three dimensions of sustainability. Some of these models include Payback Period (PP), Workplace Ecology Index (WEI), Customer Loyalty Index (CLI), Corporate Social Responsibility (CSR), Extent of Influence and Leadership (EIL), and Long Life, Loose Fit and Low Energy (3L).

3. Practice-based case study for processing sustainable built facilities

This stage adopts a case study approach. The company chosen in this research is Energex and the building examined is Energex's headquarters in Newstead, Brisbane. Energex is a government-owned corporation and one of Australia's

biggest electric power distribution companies. It uses location intelligence technology to enjoy the finest geographies of opportunity and has been given awards for its strong environmental focus, customer communications and community safety (Energex Limited, 2013). The Energex Newstead building is a six-star Green Star commercial building and is of world-class standard in environmental considerations and energy efficiency. This research investigates the approach of Energex as enterprise stakeholders, investigates the corporate objectives and strategies of Energex, analyses the quality of physical design at Energex Newstead and identifies the key stakeholders and their influence.

4. Knowledge gap identification

The intersections of the outcomes of the literature reviews, the exanimations of previous research models and the practice-based case study confirm that a substantial knowledge gap exists. The literature shows support for TBL but suggests measurement is both controversial and difficult. The previous research models provide ideas for quantifying performance, but are silent on how a collection of individual models/tools can be integrated together. The case study highlights the desire to measure performance in terms of stakeholder satisfaction, but lacks a systematic approach to evaluate and balance performance from the perspective of corporate sustainability.

5. Conceptual framework (new theory)

Using grounded theory, a conceptual framework for addressing the knowledge gap is proposed. The model draws on the literature, previous research and the Energex case study to develop an integrated rating framework, (Stakeholder Satisfaction Model) based on a simple star rating approach acting as a common 'currency'.

6. Seek expert panel feedback to validate the proposed model through focus group discussion

To validate the proposed model, expert opinion is sought using a focus group, research method. Fuller (2002) stated that an expert panel comprises a group of chosen individuals who have a vast knowledge and skill in a specified field. The panel offers researchers the chance to discuss problems and get expert opinions on the issues relevant to their research topic. The expert panel plays a vital role in providing feedback so that the model can be refined and made ready for

implementation in the industry in the future. The feedback provided by the focus group enables the model to be improved and refined.

7. Discussion of validated stakeholder satisfaction model

The proposed model is reworked based on the feedback received from the expert panel, and discussed in the light of their recommendations. A copy of the final solution is sent to each participate to ensure that their comments have been correctly interpreted. This includes the transcript of the focus group meeting (see Appendix 3).

8. Commercialising the developed theory in practice

This final stage is beyond the scope of this thesis. It involves the development of software that facilitates the evaluation process and makes it available and usable by organisations when assessing their performance. This stage will involve funding or sponsorship, a partner software developer and ideally support from one or more key industry bodies. This outcome will be specific to built facility procurement decisions and would involve evaluation over a number of years and a range of different project setting.

A summary of the grounded theory methodological approach (GTMA) is shown in Figure 3.1

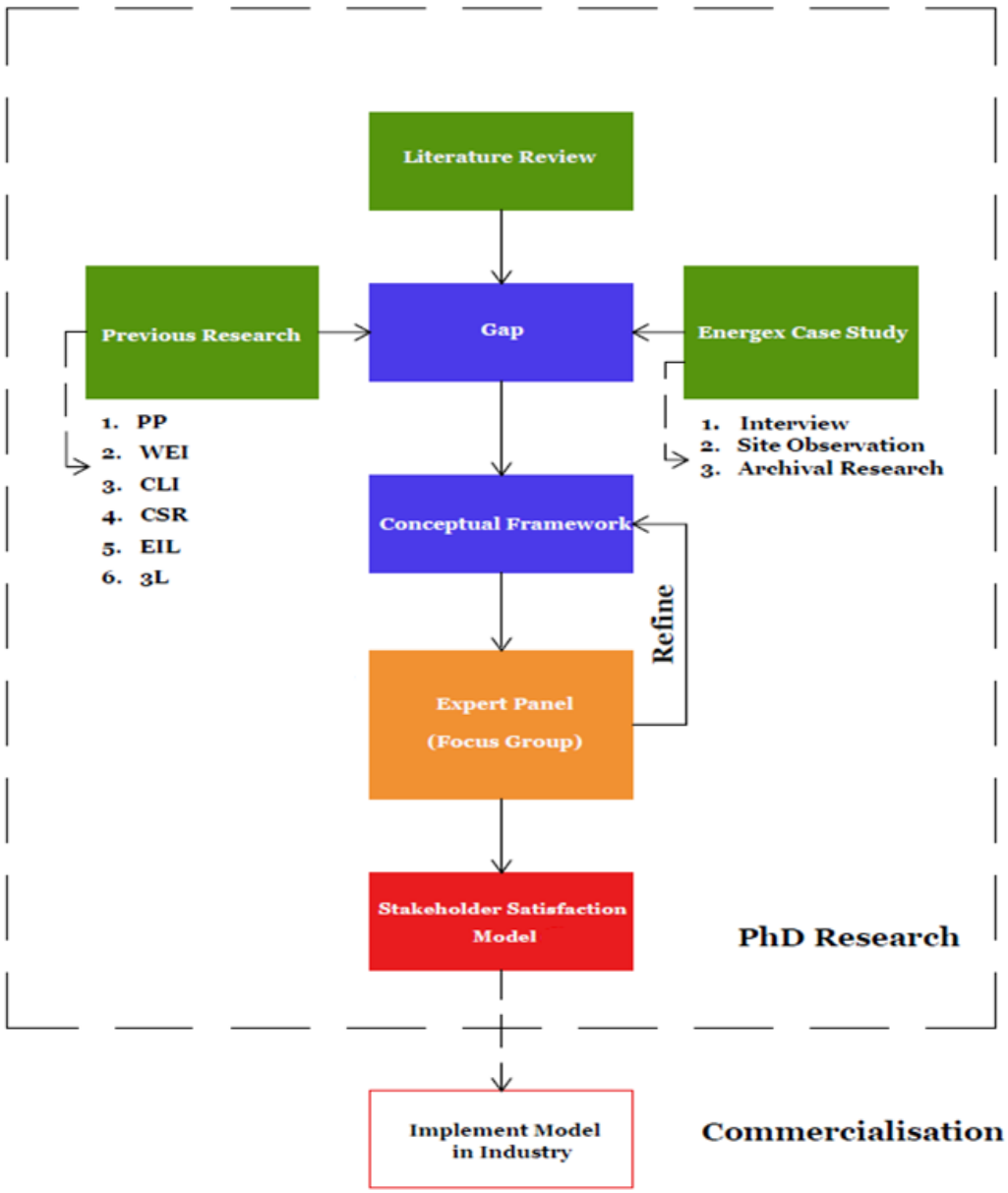

Figure 3.1 Grounded Theory Methodological Approach (GTMA)

Source: Author (2015)

3.4 Case Study

Chapter 4 is a detailed case study of the Energex Building of Newstead Brisbane. It represents stage 3 of the GTMA.

According to Yin (2013), a case study can be defined as an empirical study which aims to investigate a modern phenomenon deeply and within its real life context, specifically in situations where the boundaries between the context and phenomenon are not very clearly evident. Ideally, this method is deployed when

there is a need for an in-depth investigation of how something functions (Yin, 2013). The method is preferred where the research aims to investigate contextual conditions deliberately that may be applicable to the phenomenon under investigation. There are four types of designs that can be utilised when using this method: single case embedded designs, single case holistic designs, multiple case embedded designs and multiple case holistic designs (Yin, 2009). Before collecting data, it is important for a researcher to determine whether multiple case design or single case design will be used to address the questions the research is attempting to answer. There are six sources that can be used to collect data when using case studies. These are archival records, documentations, interviews, participant observation, physical artefacts and direct observation (Yin, 2013).

The case study method involves exploring a real-life example. This research aims to investigate the relationship between sustainability and stakeholder satisfaction; therefore, a case study is required which is globally recognised and sets an example in integrating sustainability in relating to procurement of built facilities. This research has chosen the Energex Newstead building as a case study. The Energex Newstead building is a six-star Green Star commercial building that has achieved a world-class standard in environmental considerations and energy efficiency. This research will investigate the approach of Energex as enterprise stakeholders, investigate the corporate objectives and strategies of Energex, analyse the quality of physical design at Energex Newstead and identify the key stakeholders and their influence. In order to conduct this study, ethics approval was required by Bond University Human Research Ethics Committee (BUHREC). Approval was received in 2013 to undertake data collection (Protocol Number R01689).

Case studies are quite compatible with grounded theory, and in these instance prudes understanding of the corporate decision-making process they accrued on the Newstead development.

3.4.1 Interviews

Collecting data by carrying out interviews is a qualitative research method often used by researchers. An interview can be defined as a setting where a conversation takes place with a purpose (Wengraf, 2001). Interviewing methods might vary depending on the planned structure and the latitude of the interviewee in answering questions. Patton (2002) categorised interviews into three forms: general; conversational and informal; and open-ended and standardised. This method

involves the exploration of a few topics that needs to be covered while interviewing an individual or a group of individuals. Interviewing reveals the participant's opinions on the phenomenon and the perceptions behind those views (Patton, 2002).

To collect data for this research, an interview with the Group Manager of Property Services at Energex, Mike Power, was carried out. Mr Power has more than 15 years' experience working with Energex and he is responsible for all aspects of Energex's corporate property portfolio such as regulatory funding submissions, strategy and planning, portfolio operations (portfolio management, leasing, property management, facilities management, capital works), compliance, acquisitions and sustainability. Given this experience, work responsibilities and his close interaction with and knowledge about the Energex building, Mr Power is in an excellent position to provide data for this case study. Collecting data through the interview method was used for this research as this method enables quick collection of data in quantity. The process involves collecting data in both depth and breadth.

The interview with Mr Power enabled the researcher to gain an understanding about why a six-star decision model (Community, Government, Customers, Staff, Company and Environment) was used for Energex Building (FKP Limited Video Blog, 2012). The reasons could not have been identified without using this approach. Furthermore, when conducting an interview, immediate follow-up questions can be asked and clarifications are possible. Due to these strengths, this method was chosen for the case study. The interview was held at Bond University on the 16 October 2014. The interview focused on three main topics: motivation, the case study building and green performance, as follows:

Motivation

1. Why use a six star model for Energex building?
2. Do you think all six star criteria are equally important?
3. What does each criteria mean to you?
    - Community
    - Government
    - Customers
    - Staff
    - Company and

- Environment

4. How do you know if the above were successfully achieved?
5. If you were measuring the above, how would you do it?
    - Community
    - Government
    - Customers
    - Staff
    - Company and
    - Environment
6. Do you think the Energex building is successful?
7. Given what you know now, what would you have done differently?
8. How do you validate building performance and report back to the key stakeholders?

Case Study

1. Why is the Energex building an asset for the company compared to a more traditional office design?
2. Are your staff happy and satisfied with their new environment having come from a range of older buildings? And did you face any employee resistance to change?
3. How important was change management in implementing this project?
4. What were the key features of managing change in such a context?
5. Who are Energex's customers?
6. Are your customer relationships improved as a result of this building?
7. How does the Energex building link to the local community?
8. How does the Energex building provide leadership to other clients who want to make a difference?
9. Do you think Green Star adequately describes the environment performance of the Energex building? What might be missing?

Green Performance

1. What were the key green initiatives used in the Energex building for the following:
    - Community
    - Government

- Customers
- Staff
- Company and
- Environment

2. Can we have a copy of the Green Building Council of Australia (GBCA) score sheet for your building?
3. What other information can we access when writing our case study report?

The interview discussions were fully transcribed (see Appendix 1). Once the transcript had been typed into a Word file, it was printed out and checked against the notes taken during the interview to make sure everything had been covered in the transcript in order to write up the case study.

3.4.2 Site Observation

Observation becomes a research tool when it fulfils a formulated purpose of the research, is planned in a systematic way, is recorded and is subject to controls or checks on reliability and validity (Kothari, 2004). The method enables a variety of information to be observed about the objects and the behaviour of people. It is suggested that through observation, seven kinds of phenomena can be assessed. These are physical actions (work patterns), verbal behaviour, expressive behaviour, locations and spatial relations, verbal and pictorial records, temporal patterns and physical objects (Kothari, 2004). Through observation, information can be gathered quickly. The main purpose of using this method is that the information collected is not subjectively biased and the collected information is about what is actually happening at the present time (Kothari, 2004). The method does not involve looking at the past records or behaviour. Lastly, using this method does not require respondents to be willing to answer questions and is less demanding than interviews (Kothari, 2004). However, observation can only be done for a short period of time, as observing over a long time period is both difficult and costly.

Mr Power was contacted by email to organise a site visit on 10 November 2014 so the researcher could observe the Energex Newstead building and how it operates. In this research, a physical phenomenon (the Energex Newstead building) was the main subject of observation. A significant amount of important information was collected about the Energex Newstead building. A large number of photographs recorded these observations. Outcomes are discussed in the following chapter.

3.4.3 Archival Research

Archival research methods involve a wide range of activities that are applied to help the investigation of textual materials and documents that are about the organisation or produced by an organisation (Ventresca and Mohr, 2002). Archival methods require a detailed study of historical documents, which are the documents that have been produced in the past that provide access to organisation-specific information that would otherwise be not possible. Archival methods are also deployed by scholars who are interested in non-historical investigations of texts and documents and consider them an important tool to complement other research strategies, such as surveys. This method is not only applicable to physical texts and documents but also include digital texts such as web pages and electronic databases (Ventresca and Mohr, 2002).

There are three main approaches towards archival research (Ventresca and Mohr, 2002). The historiographical approach involves considering historically-oriented work. This method gained popularity during the mid 1970s and early 80s (Ventresca and Mohr, 2002). During the mid 1970s, a new approach based on ecological research began to be used (Ventresca and Mohr, 2002). An ecological research approach involves gathering small amounts of information from the histories of many organisations so that the dynamics of organisational environments can be understood (Ventresca and Mohr, 2002). This approach is categorised as more formally oriented than the historiographical approach. The third approach is called new archivalism. This method is based on formal social science methods and ethos. It includes studying the action-oriented roots of organisational processes (Scott, 2001).

In this research, archival research was conducted using reports and documents. As the information provided by Energex were confidential reports, they are not intended for use as appendices and are not included in this thesis. They did, however, help to validate earlier information gleaned from the interview and site observation, and have acted as a form of triangulation.

3.5 Expert Panel Validation

The process of validating the conceptual framework using expert panel input is documented in chapter 6. It includes the rationale for change, what changes were recommended, and the final model based on their revision.

Consensus methodologies represent powerful tools for establishing the agreement of experts on practice issues. Put differently, they represent another means for dealing with scientific evidence that is conflicting. They enable the consideration of a wider range of studies than is usual in statistical analysis. Furthermore, they allow more meaning and a great role to be given to the qualitative evidence assessment. These methodologies are primarily concerned with is deriving quantitative estimates through a qualitative approach (Gerrish and Lathlean, 2015; Jones and Hunter, 1995).

An expert panel comprises a group of individuals who have broad knowledge and skills in a specified field (Fuller, 2002). The panel of experts offer the researcher a chance to discuss issues and obtain expert feedback on the problems related to the research topic. The data is obtained from the interactions between the members of the panel while the interest provides direction to the discussion (Trochim et al., 2015). A researcher acts as a moderator during these interactions. The sessions offer a good way of observing many interactions on a topic in a short period of time. An expert panel session provides data that would not be otherwise attainable without such interactions (Morgan, 1997; Singh, 2012). According to Moy (2008), expert panels are expected to give in-depth information, opinions and viewpoints from experts. They assess all the information available on the topic and provide expert feedback and answers to the research-based questions (Moy, 2008; Beecham et al., 2005).

To use this method, it is important to have a central topic and to provide directions to the interactions between the experts. The moderator must also plan a number of questions/points that the experts are expected to answer (Moy, 2008). The process of determining the conclusions involves a few stages. Firstly, the research is presented along with the questions that are to be answered. Then, the experts conduct their own assessment and examination of the research, either in groups or individually. Lastly, an expert panel offers their findings and interpretations in an impartial and balanced way (Moy, 2008). This method was chosen as it works efficiently when there is a complex evaluation involved. According to Moy (2008), this method enables reaching consensus on complex issues and difficult questions. It works well when an evaluation does not require the mobilisation of several resources. Furthermore, this method offers flexibility and enables production of a synthetic judgement that is based on quantitative and qualitative data. The conclusions drawn on the expert opinions are credible. Lastly, this method is

inexpensive (Moy, 2008; Singh, 2012; Shirazi, 2009; Langfeldt, 2002; Beecham et al., 2005; Asma'Mokhtar and Yusof, 2015).

However, there are drawbacks associated with this method. When using this method, the researcher must ensure that the experts have vast experience in the field, otherwise their opinions might be uninformed (Moy, 2008). Additionally, the comparison of opinions often results in the under evaluation of less important point of views. The weaknesses can be avoided by being careful in the way expert panel is organised and assembled (Moy, 2008; Bulsara, 2014).

In this research, a group of 31 experts (27 male and 4 female) from the disciplines of architecture, project management, corporate real estate, education/research, strategic planning and corporate client were invited by email to participate in a focus group discussion in order to provide feedback that would lead to revisions and improvements to the conceptual framework and help to ground it in reality. (Ethics Explanatory Statement was attached, see Appendix 2).

3.5.1 Focus group

Focus groups represent a form of group interviews that use the communication of the participants in the research with the purpose of generating data. However, unlike group interviews, which are often used for the simple and quick collection of data simultaneously from several people, focus groups use specific group interaction (Kitzinger, 1995; Rabiee, 2004).

Focus groups are characterised by several distinctive features. They use specific groups of people in order to generate data on a topic that is specified by the researcher, who is also often called a facilitator. The role of the researcher is to create the group, as it normally does not exist prior to the interviews and stops existing after they are conducted. The data that is gathered as a result of the interviews represents a function of the group's communication and interactions. But, as the researcher facilitates and manages the group, he or she plays a significant role in the creation of the data that is derived from the group (Smith, 2010).

Focus groups have been found to be very valuable from two main perspectives. Firstly, they provide the means for achieving an understanding or an insight for the researcher regarding the way people think and why they think that for various issues. They can produce in-depth information about how people think, feel, their

perceptions, understandings and impressions. They offer an excellent opportunity for exploring the gap that exists between what people say and what they actually do. Secondly, this method has the ability to cultivate the responses of the participants to events as they evolve (Liamputtong, 2011; Bloor, 2001; Onwuegbuzie et al., 2009).

As mentioned earlier, a group of 31 experts were invited to take part in a focus group discussion. 12 experts accepted the invitation (see Table 3.1). The names of the participants are not revealed for confidentiality reasons. A summary of the proposed model as well as Chapter 5 of this thesis was sent to each expert participant. One week before the focus group, a reminder email was sent with the venue details. The discussion was held at Energex Newstead on 10 September 2015. It went for nearly 90 minutes and it was facilitated by the researcher, who was assisted by a note-taker. Consent forms (see Appendix 2) were signed on that night by each participant. The panel of experts were asked to provide feedback on the proposed model. The participants were free to discuss different topics; however, feedback was requested such that it covered four key areas:

1. Use of a complete approach (Input-Process-Output-Performance Measure Dimension).
2. Stakeholder groups (company, staff, customers, community, government and environment).
3. TBL concept of sustainability (economic, social and environmental dimensions of sustainability).
4. Star rating system.

The focus group discussions were fully transcribed (see Appendix 3). Once the transcript had been typed into a Word file, it was printed out and checked against the notes taken during the session to make sure everything had been covered in the transcript. The feedback in the discussion related to the reporting and visualisation, operation, efficiency and accuracy of the model. The response of the experts provided evidence in illustrating the acceptance and validation of the Stakeholder Satisfaction Model. A full copy of the Chapter 6 this thesis was provided to each participant upon completion of analysis and writ-up.

Table 3.1 Expert Panel Profiles

Categories	Roles	Areas of interest
Architecture		
Architect 1	Architectural consultant and project manager with 26 years experience.	Design, culture and urban life, history and theory of design, cities and the arts.
Architect 2	Director with more than 22 years experience.	Green walls, urban food growing, new materials and technologies.
Project Management		
Project manager 1	Senior business and program leader with more than 20 years experience.	Program Management, stakeholder management and project portfolio management
Project manager 2	Project manager with 11 years experience.	Refurbishing and project management.
Corporate Real Estate		
Real estate 1	Director and project technical solutions. He manages over $20 million in capital expenditure, as well as delivering upwards of $400 million in major refurbishments and new construction.	Corporate real estate, sustainability and facilities management.
Real estate 2	Assistant professor and a registered architect. Also a director of a small facilities management company.	Application of computers to running large and complex buildings.
Education/Research		
Academic 1	Professor of construction and facilities management with more than 25 years experience.	Comprise of sustainable built environments and the comparative performance of construction in different countries, including multiple criteria decision-making and assessment.
Academic 2	Professor of real estate, property and executive education. He has extensive commercial experience in corporate advisory and finance in Australia and overseas.	Risk management and large project procurement including relationship contracting and public private partnerships.
Academic 3	Assistant professor of Urban Planning. He undertakes private consultancy projects with a specialisation in adoptive transitions for the built and natural environment.	Environmental planning, policy analysis and community engagement.
Strategic Planning		
Strategic planner 1	Group Managing Director and project manager with more than 11 years experience.	Organisational change, change management and stakeholder management.
Strategic planner 2	Senior Estimator with 18 years experience.	Cost planning and estimating on building projects of any value.
Corporate Client		
Corporate manager 1	Group Manager of Property Services with more than 15 years experience	Strategy and planning, portfolio operations, compliance, acquisitions and sustainability.

3.5.2 Content Analysis

The analysis and interpretations of the data obtained by deploying the focus group method needs good judgement and care, regardless of whether the analysis is based on quantitative or qualitative procedures (Krueger, 1997; Rabiee, 2004). Focus group data is usually not easy to interpret due to its subjective nature. The amount of analysis that is required in the focus group data depends on the objectives of the research, its design and the extent to which conclusions can be drawn simply (Krueger, 1997; Rabiee, 2004).

The most common way of analysing the results of focus group is to transcribe the focus group discussion and produce a summary to reach conclusions (Rabiee, 2004). A short summary of the discussion facilitates understanding the direction of discussions and helps to produce a conclusion (Rabiee, 2004). For this research, the interview that was carried out with the focus group was recorded and the transcription of the interview enabled the researcher to reach conclusions quickly.

A number of definitions of content analysis can be found in the literature. In its classical definition, content analysis represents a research method that is used for the systematic, objective and qualitative analysis of the content of communication (Berelson, 1952). According to Patton (2005), content analysis is a technique used for the making of inferences through the systematic and objective identification of specified characteristics of messages. Another definition provided by Krippendorff (2012) stated that content analysis is a technique that can be used in research for the making of inferences that are valid and replicable from the data to their content. Prasad (2008) sets content analysis to be any procedure that can be used for the assessment of the relative extent as to which specified attitudes, references or themes penetrate a given document or a message. Today, content analysis has a significant application in numerous fields of study including journalism, communication, psychology, sociology and business, and its usage has been continuously growing in the past several decades (Elo and Kyngas, 2008).

In summary, the greatest value of content analysis is presented in research that requires sifting though large volumes of data as it eases the process and enables it to occur in a systematic fashion. It is also valuable in research which aims to discover and/or describe the focus of an individual, group, or organisation. Additionally, content analysis allows for the creation of inferences that can later be corroborated through the use of other data collection methods. Content analysis is

extremely valuable for research where the process of inferring from data would be too obtrusive, costly or no longer possible with the use of other techniques (Stemler, 2001; Hsieh and Shannon, 2005; Elo et al., 2014).

Innovations in software technology have resulted in electronic techniques for data coding (Al Yahmady and Alabri, 2013). Using a computer provides assurance that the user is working more thoroughly, methodologically and attentively. Hence, qualitative researchers are motivated to employ software technology and utilise it as much as possible. NVivo is a qualitative data analysis (QDA) computer software program that enables researchers to improve the quality of research. With programs such as NVivo 10, qualitative data analysis is now simpler and the results are more professional than using earlier forms of analysis. QDA software also assists in reducing a significant number of manual tasks and provides the researcher with more time to recognise themes, discover tendencies and derive conclusions (Al Yahmady and Alabri, 2013). NVivo 10 is an ideal tool for researchers who are working in teams as it supports combining the work of different individuals and bring the project together (Al Yahmady and Alabri, 2013). Bazeley and Jackson (2013) notes there are five key tasks in which this software helps with the analysis of qualitative data. These are the management of data (organising several data documents), the management of ideas, query data (using software to answer queries), modelling visually (producing graphs to reflect the relationships between theoretical and conceptual data) and reporting (utilising collected data and results to produce reports of the study).

3.6 Conclusion

This chapter discussed the overall research methodology used in this research and outlined the approach that has been adopted to achieve the research's objectives. It is identified that there is a significant knowledge gap regarding the measurement of the sustainability performance of business organisations. There are various tools that were based on the integration of sustainability into business operations; however, little attention has been given on the measurement of organisational success towards sustainability. There is a need to develop comprehensive sustainability performance measures that consider all the three dimension of sustainability and can be applied by business organisations to measure their progress towards sustainable operations.

In summing up, this research is based on the grounded theory method. The constricted GTMA comprised a number of separate but interdependent stages. Collectively this covered literature review, past research, case study (including interview, site observation and archival research), knowledge gap identification, conceptual framework (or proposed model), expert panel validation (including focus group and content analysis) leading to the development of a novel Stakeholder Satisfaction Model for procurement of built facilities based on a TBL approach. Subsequent to this work, commercialisation of the model is to be pursued. The next chapter explores a case study of how stakeholder satisfaction has affected the sustainable procurement of built infrastructure. The company chosen in this research is Energex and the building examined is Energex's headquarters in Newstead, Brisbane. Energex is a government-owned corporation and one of Australia's biggest electric power distribution companies. The Energex Newstead building is a six-star Green Star commercial building and is of world-class standard in environmental considerations and energy efficiency.

CHAPTER 4:
Energex Newstead Building Case Study

4.1 Introduction

Stakeholders of a business organisation play a vital role in enhancing the ability of the organisation to achieve its aims and objectives. Traditionally, the focus of business organisations was only towards the investors who have the actual financial stake in the company. This approach changed over time based on the belief that there are other parties involved too and their interests must also be protected along with the interests of the investors. But emphasis has also been placed upon the integration of sustainability in business operations, and business organisations are expected by the stakeholders to operate in a sustainable way. This chapter will focus on the relationship between the satisfaction of all of the identified stakeholders and sustainability, and aims to develop an assessment model that will help explain the relationship between stakeholder satisfaction and the level of the sustainability of the workplace. This is achieved by building an integrated stakeholder satisfaction model based on a literature review and an in-depth case study. The Energex Newstead building has been chosen as the case study for this aspect of the research (see Figure 4.1). The chapter discusses how Energex has successfully achieved its goals based on the levels of stakeholder satisfaction.

Figure 4.1 Energex Building, Newstead Riverpark

Source: Author (2014)

Energex is a government-owned corporation and one of Australia's biggest electric power distribution companies. It uses location intelligence technology to enjoy the finest geographies of opportunity and has been awarded for its strong environmental focus, customer communications and community safety (Energex Limited, 2013). The Energex Newstead building is a six star Green Star commercial building and has achieved a world-class standard in environmental considerations and energy efficiency. This research will investigate the approach of Energex as enterprise stakeholders, investigate the corporate objectives and strategies of Energex, analyse the quality of physical design at Energex Newstead and identify the key stakeholders and their influence.

This chapter is structured as follows. This section introduces the chapter. After that we focus on the methods that were used to collect the data, explain how the case study was selected and provides a background of the Energex Company. A brief review of Riverpark, Newstead (the Energex Newstead building site) is also included. An in-depth review of the Energex Newstead building and the existing research, studies and reports of buildings relating to stakeholders is also provided.

Additionally, this section contains a brief review of the Green Star categories that composed the Energex Newstead building procurement process.

4.2 General Approach

All research is based on an individual's perspective of the world and their immediate environment. Flowers (2009) stated that these opinions and views establish research philosophies. According to Saunders et al. (2009), research philosophies can be categorised into three categories: interpretivism, realism and positivism. Hatch and Cunliffe (2006), described the interpretivism philosophy as referring to a personalised comprehension and understanding of situations and occurrences is developed by the researcher. In comparison, positivism is defined as an approach adopted by the researcher where only factual knowledge is attained through observation (Hatch and Cunliffe, 2006), and the researcher's role in this approach is restricted to the collection of data and its interpretation via an objective approach. Lastly, the realism approach involves the adoption of a scientific approach towards knowledge development (Hatch and Cunliffe, 2006). This research is based on the positivism philosophy.

According to Saunders et al. (2009), a research strategy is the framework that is adopted by a researcher to find out the most effective sources of information and how to collect it reliably and accurately. There are many different research strategies, including action research, archival research, ethnography, case studies, surveys and grounded theory (Saunders et al., 2009). For the purpose of this research, an in-depth case study approach will be adopted. This approach involves carrying out an empirical investigation which includes a detailed evaluation of a particular phenomenon using a number of multiple evidence sources within its environmental context (Robson, 2002). This research approach is ideal for an exploratory study and has the objective of investigating stakeholders and workplace satisfaction (the phenomenon) using the Energex building context.

To achieve the research objectives, primary and secondary data will be evaluated. Saunders et al. (2009) stated that it is highly important to use multiple sources of information in case studies to assure that the data collection is accurate and is a reflection of the reality. Hence further methods of data collection including archival research, Internet sources, published and confidential reports, site observation and an interview with the Group Manager of Property Services at Energex, Mike Power,

are employed. Mr Power has more than 15 years' experience working with Energex and he is responsible for all aspects of Energex's corporate property portfolio such as regulatory funding submissions, strategy and planning, portfolio operations (portfolio management, leasing, property management, facilities management, capital works), compliance, acquisitions and sustainability. Given this experience, work responsibilities and his close interaction with and knowledge about the Energex building, Mr Power is in an excellent position to provide priming data for this case study.

4.3 Energex Australia

In order to gain an understanding of Energex's current situation, it is useful to look at the company's history. Energex is a leading electric power distribution company based in Australia. It is owned by the Queensland Government and has its headquarters in Brisbane. The company was founded in 1922 under the name City Electric Light Co. (CEL). From 1977 to 1997, Energex operated as the South East Queensland Electricity Board (SEQEB) and provided electric power to South East Queensland. When the National Electricity Market (NEM)[1] was formed in 1997, SEQEN was corporatised and became Energex. The company is a multi-utility provider and provides natural gas, LPG and electricity. In 2007, Energex's retail business was sold by the Queensland government to enable full retail competition (Energex Limited, 2014). In 2010, the company's headquarters were relocated from Charlotte Street, Brisbane to Breakfast Creek Road, Newstead to a new purpose-built building, which is the subject of this case study. Today Energex supplies to Victoria, New South Wales and Queensland (Energex Limited, 2014).

The vision of Energex as stated by the management is as follows: *"By 2015 we will transform ENERGEX into a customer-centric organisation providing sustainable energy solutions. Our skilled and capable people will see us an employer of choice as we create new customer solutions and opportunities. We will support our customers' 21st century lifestyle aspirations and partner with the community to build sustainable economic growth in South East Queensland. In alignment with our shareholders we will be a safe, efficient, environmentally sustainable and commercial organisation"* (Energex Limited, 2012). The company aims to achieve balanced economic and commercial outcomes so that there will be long-term sustainability for electricity distribution in South East Queensland.

[1]The National Electricity Market

The company's vision as mentioned above is based on the following corporate values:

- Putting safety at the forefront of its strategic planning;
- Delivering what has been promised to customers;
- Acting as a team player;
- Supporting and respecting each other;
- Setting an example for others; and
- Delivering balanced outcomes.

The vision and strategic goals of Energex demonstrate the company's concerns for the satisfaction of the needs of all of the stakeholders including customers, community, employees, the Queensland government, electricity retailers, regulators and suppliers as well as investors (Energex Limited, 2013). Energex believe that it is important to deliver balanced outcomes and ensure that all of its stakeholders benefit from its decisions and operations. Energex places great emphasis on delivering sustainable performance so that it sets a leading example for others and can fulfil the needs of future generations and not just focus on the satisfaction of present needs.

Energex's long-term corporate objectives aim to deliver long-term sustainability outcomes. The company's corporate objectives can be illustrated by the balanced commercial outcomes model as shown below (Energex Limited, 2012):

Figure 4.2 Energex Balanced Commercial Outcomes Model

Source: Energex Limited (2012)

The model illustrates how Energex structure their operational as well as strategic decision-making. It reflects that the vision, purpose, and values of the company places great emphasis on the balance between the customer outcomes, economic outcomes and effective risk management. Achieving this balance is central to company's long-term strategic planning process and core to its daily operations.

At Energex the main corporate objectives reflects the company's core values and are stated as follows (Energex Limited, 2012):

1. *To improve customer benefits*: The company's main focus is on strengthening and maintaining its position with its key stakeholders including retailers, customers, regulators and the government. It includes providing customers with options to manage the electricity prices and the delivery of customer service and cooperating with the retailers to facilitate effective management of services and demand. Energex aims to understand the retailer and customer value drivers and identify the most cost-effective methods of delivering services to them. To achieve its corporate objectives, it understands the importance of keeping up with the pace of technological developments, managing expenditures and working closely with the retailers so that pricing strategies can be improved.
2. *Increase the productivity of its assets*: The company aims to increase the productivity of its assets, which are the ratio of output to capacity. It is focused on enhancing the capital efficiency of its businesses and delivering returns on every dollar that it invests into its asset base. The key criteria under which the company operates include sound commercial practices, prudent investment and relative efficiency. The company continually attempts to enhance the capability of its assets significantly so that it can penetrate the distributed energy resources. This corporate objective of the company aims to drive investment at a greater sustainable level and adapt to the growing importance of efficiency and benchmarking in the national electricity market.
3. *Improve the performance of its businesses*: This corporate objective of the company is of ultimate importance to ensure that the company is able to maintain a culture of prudent business and financial management and builds credibility in the eyes of its key stakeholders including regulators, shareholders and the government. The company seeks to improve its traditional business performance by driving operating efficiencies, identifying

ways to generate higher revenues and exploit opportunities to enhance scale efficiencies. This objective will enable the company to assure that it achieves a competitive benchmarking rating.

In 2014, Energex provided its energy distribution services to approximately 1.4 million business and domestic users and delivered electricity to almost 3.2 million people in Australia. Central to its business are its high-performing assets, which have a value of about $12 billion. The company employs a total of 3,000 employees and has a reputation for providing its customers with high-quality energy solutions that are socially, economically and environmentally sustainable and acceptable (Energex Limited, 2014).

The distribution networks of the company are well supported by its advanced management systems and technological innovations which enable the company to achieve high standards in terms of safety, quality and efficiency. These standards are benchmarked to international standards or are nationally or internationally certified. The company's corporate agenda places high emphasis on corporate responsibility and sustainability and involves adoption of contemporary social and environmental practices (Energex Limited, 2014). The distribution networks operated by Energex cover approximately 25,000 square kilometres and include greater Brisbane, the Gold Coast, Ipswich and the Sunshine Coast. The diagram in Figure 3 shows Energex's distribution area (Energex Limited, 2013).

Figure 4.3 Energex Distribution Area

Source: Energex Limited (2013)

Energex has been able to keep itself at the forefront of the energy industry. It has developed a very strong reputation for its effective asset management which includes its specialised engineering services, energy solutions and metering applications. It aims to continually adapt its ways of doing business to be able to keep up with the pace of environmental changes. This is a reason why the company is an Australia's leading energy company specialising in energy products and services to the country.

4.4 Newstead Riverpark Site

In 2007, Mirvac CEO Chris Freeman announced to the media that Newstead Riverpark, a former Gasworks site located approximately 2 kilometres from the Brisbane CBD, would soon become the premier and most vibrant mixed-use community in Queensland (Molloy, 2007). At that time, the 17-hectare development site was little more than a hole in the ground on Breakfast Creek Road at Newstead (Molloy, 2007). Newstead Riverpark is one of the most important locations for the Queenslanders as it provides a significant opportunity to deliver higher commercial and residential densities while offering substantial retail amenities, green space and accessibility to public transport facilities (FKP, 2008). As it had been a

gasworks, there was a number of contamination issues present at the site which had to be dealt with before any further work could be done. With the Gasworks Urban Renewal Project, that had a value of $1.1 billion and was the largest renewal urban project in Queensland at the time, a brownfill site was converted into a mixed-use commercial and residential space through the integration of commercial, retail, civic and residential spaces surrounding the Gasometer frame. This location was called Newstead Riverpark and it was designed to be an eclectic community of commercial, civic and retail spaces, river walkway, bicycle paths and parklands.

Figure 4.4 Gasworks Newstead Riverpark before Renewal

Source: RCP (2013)

Energex Headquarters is the first important commercial building that was located in Newstead Riverpark (Arch Daily, 2013). When moving to their Newstead Energex Headquarters, the company merged five different buildings with different locations (185 Warry St, 119 Charlotte St, 150 Charlotte St, 2 Bowen Bridge Rd and 229 Elizabeth St) into one facility. Energex's group manager of property services highlighted Energex's requirements for their new site:

> *Saving costs, consolidating our operations out of five buildings into one, those sorts of things. So the business efficiencies that would come with the move to commit to a new building in a new location that had a Green Star rating that were favourable. If we had elected to stay in the CBD spread across a number of buildings or even consolidate into a new*

> *building in the CBD, the rental difference over the first 15-year lease term compared to moving out to Newstead into a campus-style Green Star building was in excess of $100 million a year - $100 million over the 15 years. That's $100 million more that would've been passed through to the electricity customers if we had stayed in the CBD and had a new building committed to us or even had just stayed in the existing buildings and they'd all moved up to market rents over time. (Mike Power)*

Two Australian architectural firms Cox Rayner and BVN Architecture, who had been awarded and recognised at the World Architecture Festival 2010, were selected to design a sustainability-based workplace for Energex (Architecture and Design, 2010). Cox Rayner had been awarded for the best Transport Building globally whereas BVN Architecture had been recognised and rewarded for Best Health Building globally. Cox Rayner worked for Brisbane City Council and was the original master planner for Riverpark. The Energex Headquarters was jointly designed by BVN Donovan Hill for fitout and Cox Rayner for architecture, so that Energex's aspirations for a cohesive and vibrant working community can be achieved and made visible to the people living in Brisbane (Arch Daily, 2013). The two firms collaborated and worked together to create the headquarters of Energex in Newstead Riverpark (Architecture and Design, 2010).

4.5 Energex Newstead Building

Energex Newstead was acquired by the Cromwell Riverpark Trust in 2009. It formed a part of the Gasworks urban renewal project. The building is recognised as a Queensland Government asset and one of the most energy-efficient buildings in the commercial sector. The building has earned a six star Green Star accreditation and demonstrates a world-class standard in environmental considerations and energy efficiency. Energex Newstead is located on the eastern side of Breakfast Creek Road.

In February 2009, the FKP Property Group signed an agreement for the development and sale of the Energex Newstead Building at Newstead with the Cromwell Riverpark Trust. According to the agreement, the Cromwell Trust would acquire the premises on which FKP was developing an A grade retail and commercial building. Construction was completed by 2010 (FKP, 2009). This

building was pre-leased as the corporate headquarters to Energex Limited and was designed as Australia's largest and Queensland's first six-star Green Star building. According to the Green Building Council of Australia, the Energex headquarters demonstrates world leadership in the area of environmentally sustainable commercial building development. Energex is the largest tenant in the building, but not the only tenant.

As Energex Newstead is a purpose-built office building, it is able to respond well to the climate and the needs of a modern work place. The building aims to foster connections around and within the Newstead Riverpark and offers substantial amenities for the building users as well as the public in general. The elevations were devised keeping in mind the principles of passive solar system. Each side has been modified for a specific orientation (Futurarc, 2011).

At the arrival space, there is a café that enables office occupants to stay within the location but outside the building. Such space is used by occupants as an informal meeting space where they can interact and share information through social networking. The building stays active after working hours and also over weekends without making any compromises on building security. Furthermore, also on the ground floor, there is a showroom or retail space along the edge of the Breakfast Creek Road. Landscape both outside and inside the building on the axis of the atrium at ground are viewed from various parts of the building. The campus style building with flexible and large floor plates and three atrium spaces at full height within the building's centre spine gives a distinctive look and creates a cohesive and vibrant working community. Landscape continues throughout the building and is a strong theme. It carries on within the ground plane and goes through the secure zone continuing on the first level to the distant end of the atrium. A significant green environment is achieved through planters that add substantial soil depth.

Figure 4.5 Showroom or Retail Space

Source: Author (2014)

The chief operating officer of FKP, Geoff Grady, states that the seven-level Energex Newstead building was built using materials that are sustainable and demonstrates a vast range of green features, including a glass atrium, which maximises the penetration of natural light, and harvesting of rainwater through storage tanks (Futurarc, 2011). The construction of Energex Newstead as a six star Green Star Building is a step forward for the construction industry and it provides an example to environmentally conscious and socially responsible organisations as to how they can reduce the carbon footprints of each of their staff as well as of their operations. During the construction of the building, several building tours and technical sessions were hosted. The building has been used by professional institutes to allow their members the ability to experience and inspect the many features of the building (Futurarc, 2011).

As mentioned previously, one of the key aims of Energex is to satisfy the interests of all of their stakeholders through having a sustainable building. Six key stakeholders have been identified and include: community, company, government, customers, staff and the environment (FKP Limited Video Blog, 2012). These following sections will examine how the interests of the stakeholders were considered in the development of Energex House.

Mr Power explained that due to requirements set by the Queensland Government, Energex needed to lease a five star Green Star building. However, when the tender was being sought to supply the building, a six star Green Star proposal was offered at no extra cost to Energex. As there was no additional charge involved and the six star Green Star proposal had the capability to enable Energex to meet the needs of its stakeholders more effectively, especially the community at large, Energex agreed. The investors had their own interest in offering Energex a six star building. They wanted to be able to say that they designed Queensland's first six star Green Star building and they wanted to achieve Green Star outcomes in the most effective manner. As described by Mr Power:

> *Our initial target was actually a five star building with a 4.5 ABGR rating as well and when we went out to tender for someone to supply this building – to build it and provide it to us, 'cause we don't own the building, we leased it but we committed to the lease upfront which, I guess, funded their development. The developer that came back to us, that was shortlisted, we negotiated with as the preferred model. Obviously when you're going through tenders you play your cards close to your chest. They were unaware they were the lead bid and to secure the deal they agreed to up the outcome from a five star Green Star proposal to a six star Green Star proposal at no extra cost to Energex. (Mike Power)*

The decision of Energex to build a building based on sustainable benefits was made at the time when Energex was a distributor and a retailer of electricity. Mike Power further elaborated that the company had genuine external customers and had a significant market share, so the Green Star rating was an add-on that enabled the company to lead by example. Constructing a building like the Energex headquarters definitely set an example for other commercial builders and investors. Queensland's then Mines and Energy Minister, Geoff Wilson, stated that Queensland is the country's main source of innovation and that projects like the new Energex headquarters would help the State reach their goal of reducing the carbon footprint of Queenslanders by a third by the year 2020 (Property Council of Australia, 2008). During the interview, Mr Powers revealed that Energex always promoted the interests of the stakeholders; therefore, when considering building proposals the needs and requests of government and society were taken into

account. According to Mr Wilson, during the planning stage advanced technologies were included in the design such as active chilled beam cooling, photovoltaic cells, unique waste management systems and automatic water harvesting. These would enable wastage reduction by up to 55 per cent in certain areas (Property Council of Australia, 2008). Overall, he said that the building was designed so that it consumed two-thirds less electricity than similar commercial buildings. Mr Wilson mentioned that in 2008 (prior to the construction of Energex headquarters) that the aims of project were not only to bring benefits for future generations but also to set an example in both industrial responsibility and Queensland architecture. As demonstrated by the statement of Geoff Wilson, such a project can be for the benefit of all the stakeholders.

4.5.1 Company

The company is one of the most important key stakeholders for any of the commercial organisation for which profit is one of their main priorities. According to Terry Effeney, the CEO of Energex, Newstead forms the basis for business excellence that minimises the operating costs and provides an innovative new method to do things and stay connected (McManus, 2014). Mike Power stated that from his perspective, the company is the most important stakeholder on the basis that Energex commercial organisation aims to profit. He said that all the stakeholders important but they are not at the same level of equality.

> *Well... Me personally, I think they're not all equally important. From the business approach to our decision, certainly the company line was more important - that's about savings - what was best for the company. (Mike Power)*

Energex enjoys a higher asset value as a result of having a green building. According to the Daily Commercial News (2013), as occupiers and investors are becoming more concerned and knowledgeable about the social and environmental impacts of the built environment, buildings that enjoy better environmental and sustainability credentials will have greater marketability. Several studies have demonstrated that green building results in easier attraction of tenants and/or customers resulting in higher sale prices or rents (Daily Commercial News, 2013).

When employed with effective cost strategies and program management, green building does not necessarily result in higher costs. Furthermore, once in a green

building the business is able to make substantial cost savings from its operations as a result of reduced water and energy consumption, maintenance and operational costs (Energex Limited, 2013). The energy savings usually exceed the cost premiums related to construction and design, leading to a reasonable payback period. In addition to these factors, the company is also able to reduce the risk of any lawsuits over health and mould issues. As green building involves usage of moisture control detailing, ventilation tactics and contamination and pollution rejection strategies, such buildings are healthier for the occupants. All these factors result in higher profitability and a stable long-term strategic position for the company (Energex Limited, 2013).

4.5.2 Staff

Staff as an internal stakeholder were also involved in the decision-making process as they are one of the fundamental elements of Energex. Working in a sustainable building has a positive impact on the people who are employed there. For instance, the way the Energex building is designed and operates has a positive influence on Energex's staff members as the employees are provided with a clean and healthy working environment (Energex Limited, 2013). Mike Power notes that Energex consulted with staff *"and they were a big part of the decision-making."*

The building was designed to create a productive and pleasant working environment for the Energex staff. The indoor environment provides outstanding connectivity with the external environment, resulting in improved glare-free daylight levels. The air conditioning system ensures that fresh air circulates within the building, humidity levels are controlled and indoor pollutant emission is minimised (Cromwell Property Group, 2014). Additionally, staff members are provided with easy access to public transport infrastructure, meaning they do not have to drive to work. Furthermore, the showering and bicycle storage facilities encourage cycling, thus helping employees lead healthier lifestyles while at the same time protecting the environment (Arch Daily, 2014). This not only results in good health but employees find themselves motivated and taking pride in being employed at their workplace, resulting in substantial productivity gains (Energex Limited, 2013). The healthy working environment also reduces chances of illness, thus resulting in reduced absenteeism.

Figure 4.6 Change Room Facilities

Source: Author (2014)

According to the CEO of Energex, after moving to the Energex Newstead building, early feedback was requested from staff. Staff were generally positive and the feedback included statements such as "it's a great building to work in" (McManus, 2014). They found that the new building not only provided a healthy working environment but also motivated staff to work in a productive manner (McManus, 2014). The relocation to Newstead amalgamated Energex's five inner-city properties with 1,650 employees in to a single six-storey building of a distinctive design, while at the same time reducing the rental costs by an amount equivalent to $22 million (Land Partners, 2015).

The only concern showed by employees before moving to Energex Newstead was regarding the accessibility to public transport and other related facilities. These concerns dispersed after moving into the building (Energex Limited, 2013).

4.5.3 Customers

From the customers' perspective as a stakeholder, customers are the end users who actually pay for the electricity supplied by Energex. Mike Power said that at the time of the building's construction, Energex prices were increasing and customers were concerned about electricity prices as their bills were doubling. Constructing a sustainable building demonstrated to the customers that the

company is prudent in reducing its costs. However, for this aim to be effective it was important for Energex to make the customers understand that the decision of making a six star Green Star building had been made to reduce the overall energy costs and operate in a more sustainable way from the environmental point of view.

> *The decision was made at a time when Energex was both a distributor and a retailer of electricity, so we had genuine external customers. Energex had - every man and woman out there in business who has an electricity meter was a customer of Energex and therefore there was a benefit in Energex leading by example that we were prudent with the use of electricity, that we were focused on reducing our costs. (Mike Powers)*

For customers, Energex believed in leading by example and demonstrating that the business is operating as a good corporate citizen. Energex wanted to ensure customers understood that the decision to build Energex Newstead would reduce the costs substantially. The interview with Mr Powers demonstrated that Energex had a keen interest in keeping their customers informed and satisfied. It was evident that customers were a vital stakeholder of Energex.

> *It's about leading by example, demonstrating that we were a good corporate citizen and that we were reducing our costs to them [the customers], so our component of the electricity bill was between 40 and 50 per cent of the total bill you get and the rest of it's the generator's costs and the transmission authority's cost. We're the other part of it and we wanted to make sure that we could reduce our costs in our part of the stack, so that was part of the decision. (Mike Power)*

Using sustainable building practices enables building owners to develop a positive image in society. Today, Energex is known for its Green Star Rating and sustainable operations and practices, enabling the company to attract customers and enjoy loyalty from both customers and employees (Data Monitor, 2014). Since the company has invested heavily in ensuring that it protects the natural environment and promotes sustainability, its customers trust the brand and feel pride in purchasing services from the company. This is important as customers today are concerned about environmental and sustainability issues (Energex

Limited, 2013). Therefore, green building supports for the promotion of sustainability, allows companies to set a distinctive image and encourages customer loyalty.

4.5.4 Community

The community is a very important stakeholder for Energex and has been involved in every decision made at Energex. From the community perspective, Energex aims to operate like a good corporate citizen. This was confirmed by Mr Power, who said Energex wanted to be:

> *A good corporate citizen and that was something that we could then talk about in the community that we were leading by example, why isn't everyone else trying to do the same thing. From a community perspective, we were looking to make sure that we looked like a good corporate citizen. (Mike Power)*

Using sustainable building practices results in a sustainable environment that has a positive effect on the community. Buildings like the Energex Building are a source of inspiration for other builders in the surrounding areas and its visible success encourages them to adopt the same practices (Schneider Electric, 2006). Mike Power said that the Energex building enhanced the corporate standing of Energex:

> *We certainly have lived off the benefits of doing the right thing by the environment with the community and it's certainly been picked up at a number of forums and recognised and is still recognised today with groups of people wanting to have a look at what we've achieved there. (Mike Power)*

When sustainable building practices are implemented on a community-wide scale, it helps turn communities into neighbourhoods that are people focused. Energex sets an environmentally conscious example that assists in gaining support for sustainable building throughout the community (Schneider Electric, 2006).Thus, the Energex building is linked to the local community. As noted by Mike Power:

> *..it's a demonstration of how you can do things and have a smaller environmental footprint and still have good business outcomes and the fact that the property community is certainly*

very interested in our building still, about how we did it and what we did, as I mentioned about the Bank of Queensland. A lot of people want to talk to us about how did we do it and why did we do it and did it really work. It is a challenge being a pioneer into this sort of stuff and there was a lot of risk involved but through a good team, we managed to deliver what we needed to deliver. (Mike Power)

4.5.5 Government

In the Energex Newstead project, the government was a stakeholder who set laws and legislation but who had no interest in the rating of the building. He said that the only factor that was of concern for the government was that the building needs meet the minimum requirement of a 4.5 star Green Star rating as, per the policy imposed by the government at that time.

From a government point of view, really the driver there was they had no real interest in what rating our building was except that it needed to be a minimum of 4.5, I think it was, Green Star, and that's because the government had a policy at that time that every state department and agency had to have a building that achieved those ratings if they were going to lease it. (Mike Power)

Hence when Energex headquarters were being designed, the government was only interested in making sure that the building met the minimum requirement. Power states that the government was not concerned about how the rating will be achieved, for example whether it would be through the provision of a range of water recycling, energy efficient lights or by locating the building close to the public transport facilities. It was the Energex management who decided that the Energex headquarters would be constructed following the campus style so that it can receive better ratings.

From a government point of view, it was a black and white one. We achieved that - we got the building that rated what they wanted us to rate and we were able to report on that and that criteria has been closed off on. (Mike Power)

The regulation implications for Energex were Green Star; CT scheme; mandated performance to satisfy departments and agencies; and NIGERS.

The Green Building Council of Australia aims to define and develop a property industry in Australia that is sustainable. The Council encourages the adoption of green building practices via market-based solutions and motivates businesses to implement green building technologies, practices and operations (Green Building Council Australia, 2008). The Energex Building demonstrates best environmental site design practices on a wide range of indicators ranging from materials, energy, land use, water to transport and emissions (Green Building Council Australia, 2008; Energex Limited, 2013). It is not only in Australia that green building is being encouraged but all across the world, hence green buildings affect the government positively as it enables them to achieve their aims in terms of global sustainability.

4.5.6 Environment

The systems and mechanisms that make up Energex protect the environment, which is also considered a pseudo stakeholder. The business efficiencies and the sustainable outcomes achieved were aimed to benefit the natural environment. At Energex a key goal was that that the operations of the company must cause a minimum amount of damage to the environment. In 2013, the Energex Headquarters was one of only six buildings located in Queensland which has been accredited with a six star Green Star commercial building rating (Arch Daily, 2013).

Energex used a sustainable planning system appropriate for buildings with a campus style. It comprised 20-metre wide linear plates that are parallel to each other and separated by a ventilated atrium roofed with EFTE cushion to enable daylight penetration (Arch Daily, 2013). Furthermore, it connects external solar devices to every elevation to simplify orientation controls. From a technological point of view, the building reduces carbon emissions significantly, approximately by 2,100 tonnes per annum (Arch Daily, 2013). It also has a rain tank with a capacity of 200,000 litres, which enables it to reduce water consumption by 55 per cent. The building design enables air flow at the rate of 150 per cent, which is above the Australian Standard. Also, less parking is required than the planning allowance due to the provision of easy accessibility to public transport. Materials selected to construct Energex's headquarters reflected Energex as a responsible citizen as they utilised half of the cement from waste and more than half of its steel from the

recycled materials. The graphical representation and the colour scheme of every floor demonstrated the changing geographic nature of the operating regions of the country (World Interior Directory, 2011). These are some of the distinctive strategies that set Energex Newstead apart from other projects (Arch Daily, 2013).

> *The open plan campus-style environment does actually help and that delivers productivity improvements that are beyond the cost savings of the development itself. On the environment side of it, just on the straight consumption data, yes definitely achieved our objectives there. We have achieved our water and energy savings that we said we would so we've ticked that box. (Mike Power)*

The construction industry has a direct and substantial impact on the natural environment and on productivity and health. Buildings account for greenhouse gas emissions, raw material consumption and potable water use. The impact on the environment and on surrounding communities of buildings is adverse and substantial. Through breakthroughs in sustainable and green building design and engineering, this impact upon the environment can be minimised resulting in sustainable natural environment (Green Building Council Australia, 2008). Sustainable building also involves the employment of clean air standards for outdoor use during the construction phase as well as indoor use once the construction has been completed. Energex Newstead and similar buildings can enhance and shield biodiversity and the surrounding ecosystems. The building also helps to minimise solid waste and protects the natural resources by seeking alternative energy sources, for example solar power (McManus, 2014).

4.6 Energex Outclass Design

In addition to the six-star Green Star rating, the Energex building also received a 5.5 star rating of NABERS Base Building Energy. NABERS is “a national rating system that measures the environmental performance of Australian buildings, tenancies and homes” (NABERS, 2015). The developer had targeted a five star rating but it exceeded the expected target (Cromwell Insight, 2012). Such rating for the building places it on the top ranking among all the buildings rated by NABERS in Australia. According to Mr Collins, former Manager at Cromwell National Facilities: “This rating is a testament to the difference that active management can

make to the energy efficiency of an asset" (Cromwell Insight, 2012). He added that the design of the building can be considered to be at the cutting edge of energy efficiency and offers a number of passive features of energy conservation; however, there seems to be no alternative for vigilant management to ensure that the maximum is achieved out of the facility. He suggested that energy management in an active manner includes continual review of energy profiles and trends, analysis of energy consumption, frequent interaction with the building tenants and identification and appraisal of energy waste streams, if any. Mr Collins believed that management needs to work continuously and bring new ideas to enjoy further efficiencies from the facility (Cromwell Insight, 2012).

At Energex, it is highly important to enhance performance towards sustainability and benefit all its stakeholders. The company received two commendations at the Brisbane Regional Architecture Awards in 2013 for its unique design (McManus, 2014). The first one was for the Interior Architecture and the other one was for Commercial Architecture. The Energex Headquarters also received accolades for its building design during the Institute of Architects Awards Programme (McManus, 2014). The building was also shortlisted for the Corporate Design Award in 2011 at the Australian Interior Design Awards (Colebrook Bosson Saunders, 2014). According to the Principal Director of Cox Rayner, the Energex Building is considered to be a solution to accommodate a very huge organisation in a way that it enables them to work like a cohesive community (McManus, 2014). The jury at the programme stated that Energex Newstead building is an important commercial building that creates a cohesive and vibrant working community that encourages greater collaboration between and within each of the company divisions. (McManus, 2014).The jury identified that these full height atria that offer communal spaces such as breakout/café spaces and meeting rooms along with the large floor plates are concentrated around the edge. This adds high level of visual connectivity and transparency between the building's seven levels (see Figure 4.7).

Figure 4.7 Breakout/ Café Spaces

Source: Author (2014)

The Energex building does not have any individual offices. Instead, a number of meeting rooms are strategically designed and located to support intense or introspective activities.

> *The commitment was given when we moved to Newstead that no-one would have an office and as compensation, no monetary increase for the execs who were displaced from their offices but we would have a large number of small quiet rooms where you could quickly retreat to. (Mike Powers)*

A feeling of accessibility and openness is encouraged through the communal spaces around the edge of the three atrium spaces. The jury also noted that the building has connecting stairs that worked very effectively. The stairs, like a sculpture, cut across the atrium so that physical connections between open workplace communities can be encouraged (McManus, 2014). This demonstrates that the staff have a comfortable working environment at Energex (see Figure 4.8).

Figure 4.8 Stairs

Source: Author (2014)

As Energex's focus is not only confined to investors but it also aims to cater to the needs of all stakeholders, this design enables it to provide employees a workplace that allows staff to be motivated way by providing them with a healthy and productive environment. Overall, it can be said that the facility acts as a benchmark for all organisations that wish to design a workplace in an environmentally sustainable way. The facility responds to the requirements of building tenants efficiently and delivers a long-term, purpose-built and flexible environment for the people to work in the area.

Mike Power said that while designing the new headquarters, the main focus of the company was to design a campus-style workplace where people are encouraged to freely think and collaborate (Colebrook Bosson Saunders, 2014).

> *Large companies tend to operate in silos over time. Silos form and this silo doesn't communicate well with that one and often-times they're at logger heads and you've got people that don't talk to each other and parts of the business that are actively undermining each other. We've never measured that but there's certainly a sense that we don't have that anymore. A good example is you can go for a walk in this building and bump into all the people that you don't want to talk to and*

you're forced to have a conversation because you bumped into them. (Mike Power)

The new building brings together the groups and divisions of the company that were previously dispersed across the city. Accommodating working and collaborative areas, boardroom, conference room and training facilities, library and gym (see Figure 4.9), the new building enables the company to implement a major cultural change within the organisation (Colebrook Bosson Saunders, 2014).

Figure 4.9 Gymnasium

Source: Author (2014)

The new building was a transformation of Brisbane's oldest industrial site, which enabled the company to enjoy rental savings worth $20 million over a period of 10 years. Several design principles and sustainable initiatives were adopted, including natural lighting systems, chilled beam cooling systems and sensitive waste management systems so that energy consumption was minimised. Throughout the building design, 2,500 Wishbone Plus monitor arms were utilised to offer improved strength, aesthetic and functionality. They enable CBS monitor stands to be customised to meet with the requirements of Green Star IEQ-4. They were chosen because of their strength, functionality and aesthetic.

4.7 What sets Energex Newstead apart from other facilities?

Conceptual framework that sets Energex apart from other commercial buildings

The design concept for Energex Headquarters was to create a cohesive and vibrant working community for the people of Brisbane and at the same time characterising Riverpark with extraordinary urban design (Arch Daily, 2013). The two set objectives were achieved through the design of an atrium-centred building supported by a natural daylight system that is designed to maximise human interaction. Its distinctive exterior was designed to act as a dynamic element to visitors close by, passing traffic externally, and to employees (Arch Daily, 2013).

The innovative features of Energex headquarters

The typical floor plate at Energex Newstead covers an area of approximately 4,500 square metres of non-lettable area. It is about four times bigger than a standard traditional floor plate in a standard CBD office building. The floor plate at Energex Newstead comprises two parallel plates. These plates are of 20 metres in width and are separated by a constant atrium that enables penetration of daylight into the depth of the plan. The project innovations include the following:

- Floor plates are turned to follow the street grid. These plates extend into the buffer public zones that are linked by the Breakfast Creek Road and they have been modified to enable extended southern daylight penetration.
- The structural grid is stretched up to 10.8 metres so that it can support a glazing module of 1.8 metres and a ceiling module of 1.2 metres.
- An advanced mechanical system that enables a lower floor-to-floor height than a typical commercial building. It also maintains a floor-to-ceiling height of 2.7 metres and a minimised riser area. It achieves more than 90 per cent of floor plate efficiency.
- The atrium is enclosed in ETFE fabric which enables light penetration while still providing UV resistance. The fabric is like a pillow supporting low-pressure inflation. The surface of the fabric has a fritted finish and allows making adjustments of levels of inflation leading to a greater controlled level of light penetration within the building.

- The atria are well designed in the form of primary circulation spaces with air bridges across the atrium. There are also stairs that connect the atrium to different adjacent floors.
- Two different stair strategies have been designed and developed in the western and eastern atria. These not only connect and link the levels but also promote transparency throughout the organisation.

Such innovations and developments have provided the company with the ability to boost their business and the way things are done within the organisation. Moving to the Energex building enabled all of the divisions and departments in the company to come together and work in one space. The fit-out and design innovations within the building allowed Energex to create a high-quality transparent working environment which promotes the quick exchange of information and will enable the workforce to enjoy tacit learning (see Figure 4.10). This design has not only enabled Energex to gain a six star Green Star rating but also enabled the organisation to get the best performance from their company.

Figure 4.10 Energex Building Interior Design

Source: Author (2014)

Public and cultural benefits offered by the building design

The linear atrium can be considered as a park within a park. It encourages public access and is an extension of the Riverpark master plan. The Energex building reflects how a massive commercial office building covering an area of 31,500 square metres can be designed to a form and scale that is conducive and human to its street setting and public park (Arch Daily, 2013). From a cultural perspective, the design achieves a major objective of producing workplace communities that inspire and stimulate workers from large corporations that otherwise are usually deflating in character and anonymous (Arch Daily, 2013).

> *So it's that forced collaboration that happens, the incidental collaboration that happens because to get to anywhere in that building you've got to walk. The use of lifts is very limited. People use lifts a couple of times a day coming to get to their floor. The rest of the day, largely, they'll use inter-floor travel, the stairs, and you're seeing people all the time. "There's Mary, I've got to catch up with her. That issue I've been trying to catch up with her on for the last two weeks hasn't happened so I'll do that right now 'cause there she is. Mary, you got a minute?" Down the stairs, you have the conversation, you move on. (Mike Power)*

Relationship of built form to context

The building offers its scale, length and geometry to create a clasp encompassing Newstead Riverpark. It offers different interfaces and distinctive to all of its aspects customised to their street, urban fabric and open space relationships (Arch Daily, 2013).

Cost/Value outcomes

The cost/value outcomes are effectively derived from the statement provided by the CEO of Energex, Terry Effeney. He said that Energex Riverpark provides a platform in the area of business excellence that enables it to substantially reduce operational costs (Arch Daily, 2013). As mentioned by Mike Power, the new Energex headquarters was a big step towards saving costs as it was about consolidating the

company's operations from five buildings into a single location with a Green Star rating.

Response to client and user needs

The CEO of Energex, Terry Effeney, says that Energex headquarters is a great building that has resulted in improved communication, high productivity and reduced absences of employees (Arch Daily, 2013).

4.8 Green Star Rating Tool Categories of the Energex Newstead Building

The Green Star rating system was introduced by the Green Building Council of Australia (GBCA) and is designed to enable a detailed evaluation of the entire environmental construction and design of a building. The system supports the alignment of organisational benefits and environmental benefits. It is a holistic rating tool that entails and assesses the overall impact of buildings on the environment rather than being focused on any one particular aspect, such as energy emissions. According to Roderick et al. (2011) and Seo et al. (2006), there are different aspects on the basis of which credit scores are achieved, including energy, usage of water, land, material, innovation, management, transport, health and well-being, indoor environmental quality, emission and ecology and pollution.

The Green Star rating system comprises a set of standards that not only lead to environmental awareness but are also becoming imperative commercially due to pressure from the government, customers and society for sustainable buildings and practices. Energex is a facility that meets these standards at every level as it has been constructed based on the unique and advanced water, waste and energy-saving technologies. Energex not only sets a precedent in Australia for its technology and design in relation with sustainability, it sets an example globally (Kennedy's, 2012).

4.8.1 Management commitment towards sustainability at Energex Newstead

One of the ways Energex's management demonstrated their commitment towards sustainability was to have a six star Green Star building. Within the project team, a Green Star Accredited Professional was a key participant who provided necessary guidance and advice concerning the Green Star aims and processes, ranging from design to delivery. The management was committed towards provision of pre-commissioning, commissioning and effective monitoring of quality. The contractor

and the design team were required to transmit the information and documentation to the owner of the building upon completion (Green Building Council Australia, 2008). The management at the Energex building aimed to incorporate practices in their design, construction and operations that substantially eliminated or minimised the negative impact on the environment and on building occupants. This includes adhering to a comprehensive Environmental Management Plan that is certified in line with ISO 14001 and recycling at least 80 of the waste that was produced as a result of construction (Green Building Council Australia, 2008). The aim of the management was to ensure that all the decisions made at Energex benefits all its stakeholders and were not just aimed at the generation of return.

4.8.2 Indoor Environment Quality Offered By Energex Newstead

The building has been designed with three atriums and several outdoor balconies so that it can provide an outstanding connectivity to the outside environment with improved external views and daylight levels (McManus, 2014). The air conditioning system that has been installed within the building provides fresh air with high air change effectiveness, eliminating recirculation, at a level which is 150 per cent above the Australian standards (Green Building Council Australia, 2008). The localised exhaust risers remove contaminants while an active humidity control prevents mould from developing within ductwork. The indoor air quality is high, ensuring high-quality ventilation and minimised indoor pollutant emission along with the post-occupancy air quality monitoring (McManus, 2014). This high-quality indoor environment ensures that the staff working in this building enjoy a healthy and safe working environment. This in return increases productivity and motivation (Green Building Council Australia, 2008).

4.8.3 Energy Preservation Offered By the Advanced Technological Features of Energex Newstead

Every year, Energex aims to reduce carbon emissions by more than 2,100 tonnes, which is equivalent to taking more than 520 vehicles off the roads. Integrated vertical and horizontal external shading rejects solar heat gains and also reduces the cooling loads while at the same time ensuring effective levels of natural light is glare free (McManus, 2014). The active chilled beam air conditioning with high efficiency (water cooled) and heat recovery chillers reduce the air conditioning energy consumption. The building has fluorescent lighting that is energy efficient and has high frequency electronic ballasts that minimise eye strain resulting from

flickering. The lighting systems are daylight integrated and zoned (Green Building Council Australia, 2008). All these measures ensure effective energy consumption.

4.8.4 Water Preservation Offered By the Advanced Technological Features of Energex Newstead

The building aims to reduce water consumption by 55 per cent per year. To do this, it supplements mains water consumption with harvested rainwater from the roof (Energex Limited, 2013). The rainwater storage supplies more than 200 kilolitres of water to the toilets and is also used for the landscape irrigation for the building. The building has a smart irrigation system which utilises moisture sensors to deactivate irrigation during rainy periods and facilitate supply of stored rainwater to the plant root zone according to need. The building also has an advanced fire sprinkler testing system which utilises maintenance test water for the fire systems instead of draining to sewer. Efficient fittings and fixtures are installed, including low-flow showers and taps, 4.5/3L dual-flush toilet cisterns and waterless urinals. Due to these measures, the water use will be cut by 38 megalitres every year, which is equal to the water contained in 38 Olympic swimming pools (Green Building Council Australia, 2008).

4.8.5 Materials Used To Achieve the Set Sustainability Targets at Energex Newstead

The materials used in the construction and maintenance of Energex Newstead had a minimal impact on the environment. Higher preference was given to materials with a high recycled content and a low embodied energy, and 90 per cent of the steel used had a high recycled content. During construction, 80 percent of the waste was diverted from storage space and landfill and is provided for recycling operational waste (Energex Limited, 2013). All insulants and refrigerants consumed have an Ozone Depletion Potential (ODP) of zero, which means that only non-ozone depleting insulants and refrigerants are used (Green Building Council Australia, 2008). Furthermore all refrigerants have an integrated leak detection and recovery system which ensures that the refrigerant does not leak and escape into the atmosphere and have a negative impact upon the environment. Additionally, all stormwater runoff is filtered first so that contamination of waterways by gross pollutants and rubbish can be reduced (Green Building Council Australia, 2008).

4.8.6 Emission Targets That the Energex Newstead Design Will Deliver

The building is expected to achieve the following targets regarding emissions (Green Building Council Australia, 2008):

- Reduce consumption of electricity by 64 per cent
- Reduce emission of greenhouse gas by 64 per cent
- Reduce potable water consumption by 55 per cent
- To utilise refrigerants and insulants that are non-ozone depleting and incorporate a recovery system and a leak detection system for refrigerants.

4.8.7 Land Use and Ecology

The 17-hectare Newstead Riverpark site was an abandoned gasworks and has undergone comprehensive remedial work to eliminate soil contamination. This has substantially improved the ecology of the site and allowed its reuse for retail, residential and community uses (Green Building Council Australia, 2008).

4.8.8 Transport Benefits Offered By the Distinct Energex Newstead Design

The building provides easy access to present and planned public transport infrastructure. This accessibility makes it easy for individuals to reach to Bowen Hills Railway Station and the proposed City Cat terminal (Green Building Council Australia, 2008). The space occupied by car parking is thus reduced and people are encouraged to take those modes of transport, which will enable reduction of carbon emission substantially. There are also cycling facilities along with lockers and showers provided to visitors and staff members so that cycling can be encouraged (Green Building Council Australia, 2008).

4.8.9 Does energex successfully achieve their goals based on the level of their stakeholder's satisfaction?

As a result of having a sustainable building, Energex aimed to satisfy the interests of all of their stakeholders: the community, government, customers, the company, staff and environment. The design of the Energex Newstead has achieved its target for sustainability fragmented into three main sections: socially, economically and environmentally "triple bottom line". This was achieved through effective passive design strategies rather than integrating expensive and advanced technology in order to ensure that all of the stakeholders' interests stay protected.

Community: Energex aims to engage and involve the community in the planning process and delivery of its network. It intends to become a good neighbour and lead the agenda of environmental sustainability.

> *From a community point of view, good corporate citizen outcomes. A bit of a double-edged sword there. Certainly we got a lot of accolades early on. The building was nominated for building of the year and got highly commended - I don't think we won. We were the first as designed six star Green Star building but we weren't the first as built, because by the time we were [unclear] to completion, Green Square by Brisbane City Council had been completed, so they beat us to the line in terms of the first as built six star Green Star. But we certainly have lived off the benefits of doing the right thing by the environment with the community and it's certainly been picked up at a number of forums and recognised and is still recognised today with groups of people wanting to have a look at what we've achieved there. So, from a community point of view, I think we can say that we have safely achieved our objectives. (Mike Power)*

Government: Energex ensured that its building was designed so that it met the requirements set by the Queensland government.

Customers: Energex aims to satisfy its customers by attaining network performance outcomes and improvements in customer service to meet the requirements of customers and support the demand for a wider choice and strong and positive relationships with retailers. Energex aims to continually work on the improvement of its network performance and response to emergencies in order to meet the expectations of its customers in terms of reliability. The long-term aim of Energex is to run as an intelligent and efficient connective network and offer the most efficient practice energy solutions to its customers.

> *Did we reduce our costs to the customer? We did, so and this is high level but we did a business case obviously before we make a decision such as this. If we had elected to stay in the CBD spread across a number of buildings or even*

consolidate into a new building in the CBD, the rental difference over the first 15-year lease term compared to moving out to Newstead into a campus-style Green Star building was in excess of $100 million a year - $100 million over the 15 years. That's $100 million more that would've been passed through to the electricity customers if we had stayed in the CBD and had a new building committed to us or even had just stayed in the existing buildings and they'd all moved up to market rents over time. So, we ticked the box in terms of that, and that's before we start to take into account savings in energy and water, and we've demonstrated 30-50 per cent decreases in both of those commodities over the last couple of years so I'd be happy to put my hand on my heart and say we've achieved our customer aims there. (Mike Power)

Staff: Energex aims to ensure that its buildings and the workplace are designed in such a way that they offer staff an injury-free workplace. Energex aims to develop a culture where everyone takes responsibility for their personal safety. This will not minimise the safety risk through a structured and targeted approach towards safety that offers best practice business operations and legislative compliance. Energex is highly determined and committed to create an organisation that people want to work for and to create an environment that will support an effective implementation of the strategy of the business. Energex is committed to creating an adaptable, sustainable and engaged workforce that comprise of skills, people, performance and culture needed to deliver effective business results for Energex.

Are staff happy with the building? No doubt. They love the building. Are they happy with the overall decision which includes where the building is, big question mark. I would say it's 50-50 still. 50 per cent of staff like it, they've grown and adapted to where the building is located but a number of staff that had been with the business for a long long time and were used to being in the CBD still don't appreciate the fact that they're not in the CBD anymore. So, that's beyond our control but the use of facilities, the use of technology, the pleasant environment - natural light, fresh air, all the rest of it, certainly recognised in our post-occupancy survey as better than where

they used to be, significantly better, so I'm saying it's probably half a tick but we've got to our objective. (Mike Power)

Company: Energex achieved its regulated financial targets in a way that will promise sustainability, by enhanced productivity and the distribution of electricity to customers and retailers in a cost-effective manner. Energex aims to pursue a number of initiatives and reforms to help in meeting the financial expectations of the investors and at the same time operate within the regulatory allowances that are offered under the Australian Energy Regulator.

The company, that was delivering better business outcomes, we have, both from a financial point of view … [and] from a working together as one company. (Mike Power)

Environment: Energex aims to deliver commitments within its plan for carbon reduction and attain a sustainable environmental position by integrating compliance activities and efficient business practices that reduce the damage to the environment.

On the environment side of it, just on the straight consumption data, yes definitely achieved our objectives there. We have achieved our water and energy savings that we said we would so we've ticked that box. (Mike Power)

4.9 Conclusion

Energex is among the Australia's most innovative companies in the energy sector. It has been recognised and received awards for its focus on environmental issues, community safety and customer communications. The company has been able to achieve its mission of delivering energy services supporting a sustainable future in the most effective manner. It has achieved a balance between economic and commercial outcomes so that long-term sustainability can be enjoyed. Its headquarters at Riverpark, Newstead has achieved both a six star Green Star rating and a 5.5 NABERS star rating for Base Building Energy. The Energex headquarters offers features such as a campus style building that promotes natural lighting, reduced construction costs and lift movements, enhanced ventilation facilities as a result of highly advanced chilled beam AC, 150 per cent fresh air rates and a reduction in energy consumption, water preservation due to in

built system of rainwater harvesting and recycling, improved indoor environment offering 100 per cent fresh air and reduced carbon emission levels, quiet rooms and accessibility to ecofriendly modes of transport and public transport. From the analysis, it was identified that the main drivers for Energex include green benefits/impacts (carbon targets, image and employees); occupancy and rental costs; avoiding substantial cost increases over the term of lease for energy and water; cost effectiveness; market acceptance; employee engagement; to meet regulations and willingness to do the right thing in the right way. The new Energex headquarters is designed in a way that it not only meets the targets towards sustainability but also integrates and reflects advanced technology and innovation. Such innovations and developments enable the company to boost the business and redefine the way things are done. Its fit-out and innovations have also led to the creation of a highly transparent working environment where people work together in the one space.

The main stakeholders of Energex that were identified in the case are the company, staff, customers, community, government and the environment. Energex has made sure that it satisfies the interests of all stakeholders and operates in a way that it is able to generate good returns. The investors' interest was to improve the reputation of Energex for long term sustainable position so that it could be recognised as the Queensland's first Six Star Green Star building.

Overall, Energex has been successful in achieving the objectives using a triple bottom line approach. It not only generates returns for the investors but also achieves social objectives and protects the environment in the most effective way. Such strategies and stakeholder engagement has enabled Energex to secure a sustainable strategic position in the energy sector of Australia. Its contribution to its stakeholders are clear, yet not formally measured and more intuitive then quantifiable. While six stakeholder groups were considered, they were not necessarily of equal importance. An approach that enables more objective measurement of stakeholder satisfaction would be an improvement in building Energex justify its procurement decisions. The following chapter presents the conceptual framework that is based on the literature, previous research and the Energex case study.

CHAPTER 5:
Conceptual Framework

5.1 Introduction

The purpose of this chapter is to provide an insight and better understanding of the rationale behind the conceptual framework of the proposed model, its structure and its applicability in practice. The main goal is to objectively measure the sustainability of organisational decision-making for built environment projects using a triple bottom line approach. To enable this, a detailed overview of the theoretical construct of the model and its relevance and applicability to each selected stakeholder group is provided.

This chapter is structured as follows. This first introductory section states the purpose of the chapter and provides an outline of the remaining content. It is comprised of three subsections, the first of which (Section 5.1.1) provides the background and development of the conceptual framework, the second (Section 5.1.2) addresses the importance and impact of stakeholders, while the last subsection (Section 5.1.3) analyses the universality of the proposed model.

Section 5.2 gives a detailed overview of the conceptual framework. It is comprised of seven subsections, each addressing a different aspect of the framework. Subsection 5.2.1 outlines the need for new model, Second 5.2.2 explains the concept, Section 5.2.3 provides the rationale behind its design, while the fourth subsection (Section 5.2.4) addresses the relationship between the proposed model and the Energex case study. Sections 5.2.5, links the framework to the TBL philosophy, and 5.2.6 provides an overview of the star rating system that is used to interpret performance.

Given that stakeholders represent a crucial and integral element of the conceptual framework developed in this research, special attention is given to each selected group in the third section of this chapter (Section 5.3). In other words, this section is comprised of six individual subsections, each addressing one specific stakeholder group, and each including a detailed analysis of the specific stakeholder group, providing an overview of how the star rating is achieved. It demonstrates the criteria and scaling that organisation's need to achieve different star ratings.

This chapter concludes with Section 5.4, which summarises the proposed model prior to its validated by an expert panel.

A visualisation of the structure of this chapter is given in Figure 5.1, with the purpose of supporting ease of readability and understanding of the information and analysis presented:

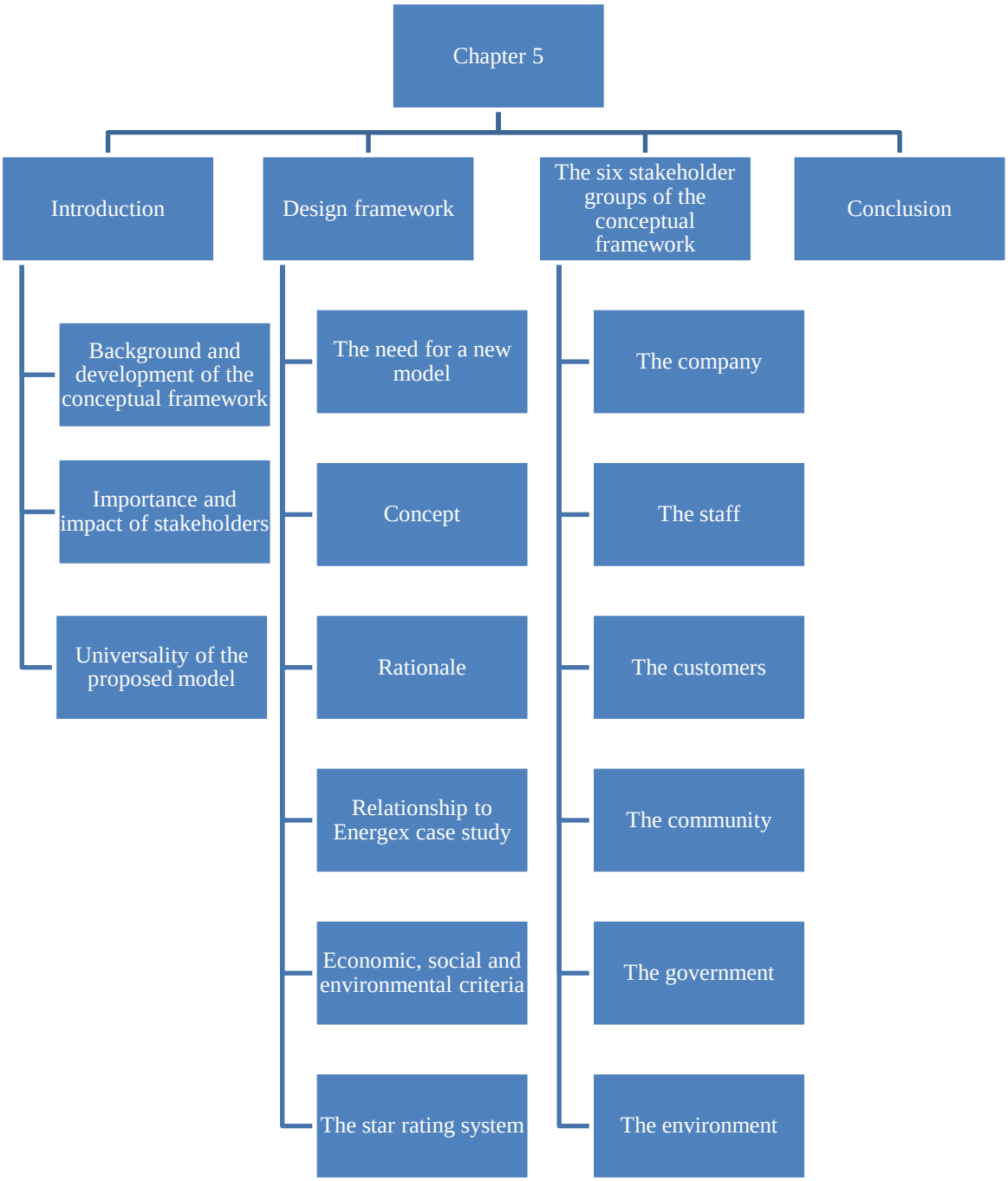

Figure 5.1 Chapter Structure

5.1.1 Background and Development of the Conceptual Framework

This research investigates the relationship between green, sustainability and stakeholder satisfaction for the procurement built facilities. As noted in Chapters 2 and 3, there is no existing viable framework that can measure all of the issues emerging from and supporting this relationship. Therefore, this research use the idea discovered in the Energex case study and various tools drawn from the

literature to propose a holistic conceptual framework for the objective measurement of corporate decision-making. The way forward is to link a number of existing tools that individually assess stakeholder satisfaction from the perspective of the company, its staff, its customers, the community, government and the environment. Even though these models have been proven successful in practice to date, they all share a common characteristic of not being able to be combined in an objective and measurable form (Bell and Morse, 2013; Taticchi et al., 2013).

Measuring sustainability is not an easy task. Taking direction from the result of the Energex case study, the review of literature review and general stakeholder theory, it is deduced that in order to measure the sustainability of organisations we should measure the satisfaction of organisation's stakeholders (Szekely and Dossa, 2014). There are a number of definitions for the term 'stakeholder' in the literature, without any common or universally accepted approach. For some authors, the term represents any individual or group that can affect the achievement of organisational objectives or those affected by the organisational objectives (Gossy, 2008). This is the definition that has been accepted as the most appropriate for use in this work. The main differences within the existing models include multiple assessment criteria, the evaluation of the same impacts at different levels, and disagreement in regards to which stakeholders should be included in the assessment (Delai and Takahashi, 2011).

The existence of these differences clearly indicates the lack of a single system that incorporates the proven benefits of various tools and methods while simultaneously, providing the means for overcoming their drawbacks and limitations. This points to the need for creation of a conceptual framework that is able to assess the satisfaction of stakeholders in general and, through this assessment, provide the foundation for organisational performance improvement. This approach is useful not only because it addresses the issue of which stakeholders should be included in the assessment, it also highlights the importance of and role that stakeholders play in the achievement of sustainable goals. No other model has previously been developed that specifically covers all of the stakeholders of an organisation while providing a means for validating performance and determining a single holistic score. To enable this to be achieved, this research assumes the context of organisational decision-making applied to the procurement of built facilities, as was the case studied in the previse chapter.

5.1.2 Importance and Impact of Stakeholders

In order to understand the importance of stakeholders to sustainability, it is first essential to understand their relationship to organisations in general. As noted earlier, stakeholders are individuals and/or groups that have a significant impact on the organisational performance through their influence on the achievement of organisational objectives or are individuals and/or groups that are significantly affected by those objectives and their achievement. Good stakeholder management practices ensure that organisations take the interests of a broad range of constituencies into account. This means that they take into consideration the communities in which they operate and they ensure that their boards are accountable to both the organisation and its shareholders. In turn, this helps ensure that the organisations operate for the benefit of society as a whole (OECD, 2004). This encompasses the focus of organisations in the global business, in terms of improving the quality and comfort of life while at the same time ensuring economic sustainability and reducing the negative environmental impacts of an organisation. These three pillars of sustainable development – the social, the economic and the environmental – help to identify the role of stakeholders in organisational sustainability efforts (Brebbia and Beriatos, 2011).

The engagement of stakeholders in the sustainable development process has been found to be crucial for ensuring successful outcomes by a number of authors (Carroll and Buchholtz, 2014; Blackburn, 2007; Eweje and Perry, 2011). More specifically, their role has been highlighted through the number of benefits they bring to an organisation. This includes the representation of a variety of perspectives in sustainability efforts, increases in the transparency of these efforts, increases in the organisational and community support for these efforts, expansion of the existing capacity for ongoing and future sustainability efforts, empowering greater involvement, increasing the awareness of the public about sustainability, improving the coordination of sustainability efforts and advancing broader policy changes (Werther and Chandler, 2010). These benefits emphasise the main principles of good corporate governance: transparency, accountability, fairness and responsibility (OECD, 2004). These principles set a good foundation for the better understanding of the relationship between an organisation and its stakeholders or, more accurately, between sustainable development and stakeholders.

The key to understanding the relationship between an organisation and its stakeholders is, undoubtedly, the engagement of the stakeholders, as poor

engagement practices bring about significant risks such as lack of stakeholder acceptance and support, organisational reputation damage, delays and significant resource losses and even strong opposition or public protest (Friedman and Miles, 2006). On the other hand, the successful engagement of the key stakeholders, such as the company, its staff, its customers, the community, the government and the environment as defined by Energex (FKP Limited Video Blog, 2012), can lead to the identification, planning and implementation of new business solutions, which are essential for sustainable outcomes. For example, the community has been found to be one of the key factors for ensuring sustainability in the tourism industry, especially in terms of innovations and new solutions (Ellis and Sheridan, 2014). The same significant role in sustainability in the construction industry is played by the government (Lim and Yang, 2006). Regardless of the industry or the specific stakeholder, their engagement represents an opportunity for the organisation in terms of creating alignment between its structures and processes in order to ensure that they support the sustainability mission and vision of the organisation (Bal et al., 2013). This supports the notion of the importance of stakeholder engagement in terms of highlighting the role of the inputs that the stakeholders provide and the processes that they are involved in that lead to successful sustainable outcomes.

What may, perhaps, best describe the role and importance of stakeholders' inputs in the achievement of sustainability outputs is the scheme of stakeholder participation proposed by Forrester et al. (2008). According to them, there are five levels of stakeholder engagement which lead to successful outcomes. These are shown in Figure 5.2.

Figure 5.2 Levels of Stakeholder Engagement

Figure 5.2 clearly indicates the various types of inputs that the stakeholders can provide to an organisation, beginning with provision of information, through to the provision of advice and guidelines, cooperating in order to achieve a set goal and co-learning, all of which lead to a participatory action. These are, of course, not provided or enabled solely by the staff of an organisation. For example, the government as a stakeholder may provide critical information about climate change and the specific environmental conditions of a region, but it can also provide

significant advice and guidelines through its experts. It can further be involved in a co-learning process, where the government learns about the sustainability practices related to reporting and compliance with regulations, thus providing the foundations for further improvements and developments of these regulations (Keijzers, 2005). This last level also highlights the role of stakeholders in the processes of an organisation that are undertaken with the purpose of achieving a sustainability outcome.

5.1.3 Universality of the Proposed Model

The new stakeholder model developed in this research is necessary not only because of its validity, but also its universality in terms of practical applications. Indeed, in order to be really useful, it is crucial that this model can be generally applied, meaning that there are no limitations to its use caused by factors such as the nature of the organisation, the industry in which the organisation belongs or the geographical region in which it operates (Leydesdorff, 2006).

The universality of the framework developed in this research in terms of its usefulness is reflected through the two main dimensions upon which this model is based. The first dimension incorporates the input-process-output (IPO) model, which has a proven application in operations management practices and is not limited by the specific characteristics such as organisation size, type and location (Simons, 2011). The second dimension represents the key stakeholders of an organisation, which not only overcomes the limitations of some of the existing models but also ensures that the sustainability issues are addressed from all perspectives, which is extremely important for the achievement of successful and sustainable outcomes (Hemmati, 2002; Szekely and Dossa, 2014). This relationship is shown in Figure 5.3.

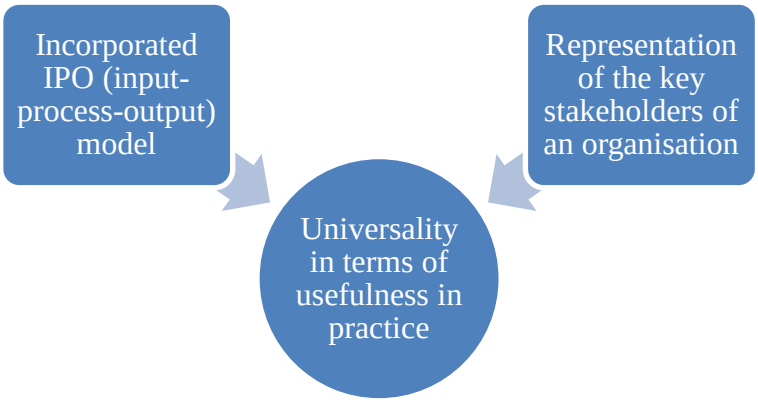

Figure 5.3 Factors That Enable and Support Universality of the New Model

Nevertheless, in this research the stakeholder model is applied to a particular project, rather than all projects. This is related to the Energex case study of procuring a new office building.

5.1.3.1 The 'Input-Process-Output-Performance' Structure

The input-process-output-performance measure dimension of the conceptual framework is based on the existing and already proven IPO model that was originally introduced approximately 50 years ago as a method for studying the effectiveness of teams (Mathieu et al., 2008). In this context, the input element of the model refers to the antecedent factors enabling and constraining the interactions of the team members, including the characteristics of the members, factors related to the team such as structure and leadership influences as well as organisational and contextual factors like the organisational structure and environmental influences. The processes in the model refer to the transformation of the inputs into outputs, where the outputs describe the results of the team's activities valued through various constituencies, such as performance or affective reactions. Since the introduction of this basic IPO model, it has founded a number of useful applications that have been enabled through various expansions such as the inclusion of larger contexts (i.e. environmental impact), of temporal elements or the inclusion of other subtle aspects that were not addressed before (Mathieu et al., 2008). This opens up opportunities for other expansions of the model in terms of studying larger contexts.

The incorporation of this approach into the conceptual framework is based on two main reasons. The first reason is its applicability to a wide variety of business areas and its capability for expansion. The second reason is because of the notion that

both the inputs and outputs can be measured, and that by linking these measures, quantification of efficiency and/or performance is enabled (Hatry, 2006).

With this in mind, the need for expanding the basic IPO model by adding a performance measurement becomes evident, as this new component enables researchers to gain a well-informed understanding of both the performance of the organisation and the factors influencing it, which can lead to the identification of successful improvement strategies. Therefore, an input-process-output-performance structure has been introduced into the framework with a specific relation to the various groups of stakeholders addressed. A more detailed overview and examination of this expanded IPO model from the perspective of each separate group of stakeholders is provided in Section 5.3.

5.1.3.2 The Stakeholder Dimension

In recent years, the achievement of targets related to sustainability has become one of the key performance drivers for many business areas, particularly related to procurement of built facilities. As such, sustainability has received a lot of attention from various perspectives. One of the main issues that has captured the attention and interest of industry organisations is the issue of stakeholders (Chinyio and Olomolaiye, 2009). The building industry is characterised by having a number of stakeholders that have influence on sustainability and contribute significantly to the complexity of the issue due to their impact and role. The main problem which occurs here is a lack of understanding or acknowledgement that all of the sustainability-relevant stakeholders are important, resulting in their absence from the decision-making process, which can easily result in a failure to address all of the sustainability issues. Therefore, it is of crucial importance to not only identify all relevant stakeholders, but also to manage them, to relate them to specific sustainability issues and to measure their performance (Bal et al. 2013).

To meet this need, this study provides both a rationale for the identification of all the relevant stakeholders for a new development, such as procurement of a new corporate headquarters and also gives a detailed overview of each stakeholder group from the perspective of sustainability and the application of the conceptual framework.

5.2 Framework Design

5.2.1 The Need for a New Model

With continuous change occurring in the global business world, characterised by new sets of risks and opportunities, it is essential for organisations to make a significant effort in conducting ongoing reappraisal of good governance. The reason for this lies in the broadening of focus. It is no longer sufficient for an organisation's management to look only into financial performance and strategic oversight (Hill et al., 2003; Smith, 2010; Weerasinghe, 2012); today the success and prosperity of organisations is increasingly and inextricably linked to a number of issues including brand, reputation, quality of intellectual and human capital, supply chain management, climate change and the protection of human rights (Von Tulder et al., 2014).

In other words, the role of organisations in fostering ecological and social well-being at all levels (local, national, and global) is increasingly being scrutinised. These conditions have led to the challenging of the conventional wisdom positioning the shareholder value as the only and key measure of success, and to the increasing of interest and attention to corporate social responsibility. Corporate social responsibility (CSR) is defined as a "management concept whereby companies integrate social and environmental concerns in their business operations and interactions with their stakeholders" (Arora, 2013, p.75). Other modern business success factors include shared value creation and sustainable capitalism. More specifically, the role of stakeholders has increased in both range and importance as they become the new power-holding organisations accountable for the way and extent in which they impact the preservation and enrichment of human, social and natural capital (White, 2012).

With this in mind, it is understandable why the number of sustainability ranking tools and schemes has grown significantly in the last decade, especially when it is taken into consideration that stakeholders' expectations have changed the way in which company sustainability performance is measured (Okoye et al., 2013). However, the increase of the number of available approaches has led to the question of which tool or scheme to use. With the non-existence of one single definition or understanding of sustainability, it is up to organisations to decide which sustainability concern is most important to them; for example, climate change, labour conditions in a factory, the consumption of irreplaceable resources,

or the use of toxic materials. The existence of these various perspectives identifies the real difficulty in the creation of sustainability rating models that are honest, useful and objective (Brodwin, 2015). A survey conducted by GlobeScan and the Sustainability's Rate the Raters project of the most commonly used sustainability tools and schemes concluded that the most important issue related to how much trust organisations hold in them, where trust is primarily constructed as a combination of credibility, objectivity, disclosure of methodology, transparency and their linkage to the organisation's stakeholders (Sadowski, 2012).

The main purpose of sustainability ratings lies in the encouragement of organisation's management to seek and implement greater control over their non-financial business risks, to increase the organisation's productivity and to improve the opportunities for the business in various areas including social and environmental impact, corporate governance and workplace practices. Both the awareness and management of these risks create new opportunities for organisations creating a positive reputation in terms of social responsibility, thus increasing revenues and reducing future liabilities and costs (Blackburn, 2007).

It is therefore important to highlight the power of sustainability ratings for providing independent assessments of a variety of business activity dimensions, depending upon the way in which the rating model is constructed. This not only allows for the achievement of a better understanding of the organisation, but is also of great use for investors who continuously look for greater transparency of business performance, especially in terms of social investments (Bauer et al., 2004; Gompers et al., 2001). What this means is that in addition to financial performance, which remains the core of corporate disclosure, both stakeholders and investors place increasing value on business information related to the social and environmental aspect of organisations, leading to organisations themselves reacting to their stakeholders' and investors' concerns. Therefore, the role of assessment becomes invaluable (Bond et al., 2012).

5.2.2 Concept

The conceptual framework in this research, for the reasons stated above, is built on stakeholder satisfaction. Stakeholders are related to their inherent interests in either economic, social or environmental lines. It uses a 'input-process-output-performance' approach and integrates the various components together via a 6-point star rating. The framework is illustrated in Table 5.1.

Table 5.1 STAKEHOLDER SATISFACTION MODEL (SSM)

Stakeholder Group	Input	Process	Output	Measurable Performance	Star Rating * (0-6)
Company	Investment costs and projected benefits	Cost-benefit analysis	Discounted cash flow (minimum 30 years)	Payback period (PP)	★★★
Staff	Satisfaction, comfort and productivity data	Post-occupancy evaluation	Happiness, efficiency and empowerment	Workplace ecology index (WEI)	★★★★
Customers	Corporate products and services	Market analysis	Retention, advocacy and purchasing	Customer loyalty index (CLI)	★★★★
Community	Website, publications and other collateral	Community liaison and engagement	Cash and/or in-kind sponsorship	Corporate social responsibility (CSR)	★★
Government	Government policy and regulation	Benchmarking best practice	Competitive advantage	Extent of influence and leadership (EIL)	★★★
Environment	Building design parameters	Design modelling and/or auditing	Certification and external recognition	Long life, loose fit and low energy (3L)	★★★★★★
** A scale linking measurable performance to a star rating is required for each stakeholder group*				**progress=**	**3.66**
Colour-coding	Financial	Social	Environmental		

5.2.3 Rationale

The above-stated characteristics were identified as crucial for the validity and justification of the Stakeholder Satisfaction Model (SSM) developed using grounded theory. It is important to understand the choice of stakeholders included in the framework, as they represent its integral building blocks. Indeed, when looked at from a stakeholder perspective, the main focus of an organisation is the development of social contacts out of which the organisation can obtain resources and can further work in order to convert these resources into value (Schlange, 2006).

The rationale behind the selection of the stakeholders in this framework is based on the construct of sustainability that was gleaned from the Energex case study. Sustainability is further characterised into its three different perspectives: economic, social and environmental, as shown in Figure 5.4.

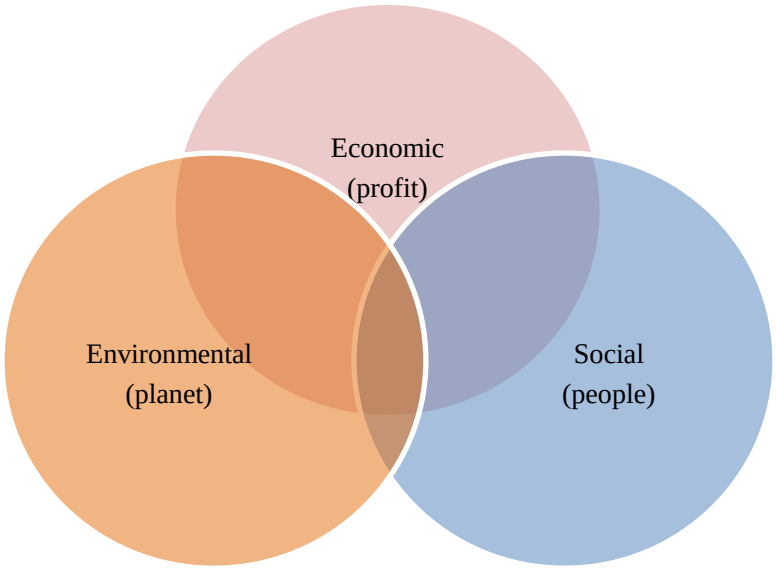

Figure 5.4 The Three Dimensions of Sustainability

From an economic perspective, the primary goal of an organisation is the creation of economic value, which places focus on stakeholders that have a direct influence on cash flow or, more specifically, on stakeholders that control financial-related resources such as funding and revenues (Haberberg and Rieple, 2008). While funding is required for the process of setting up business operations, revenues play a pivotal role in keeping the business operational (ReVelle, 2001). Therefore, there is a clear need to include the company as a stakeholder in the SSM framework.

Furthermore, while financial resources can be considered as the clear input of a company, the company uses these resources in the production process to deliver the company outputs (products and/or services). However, it is the relationship between the inputs, process and outputs that defines the performance of an organisation, which is why these should not be assessed separately, but as elements of a single chain (Pangarkar, 2011), as shown in Figure 5.5.

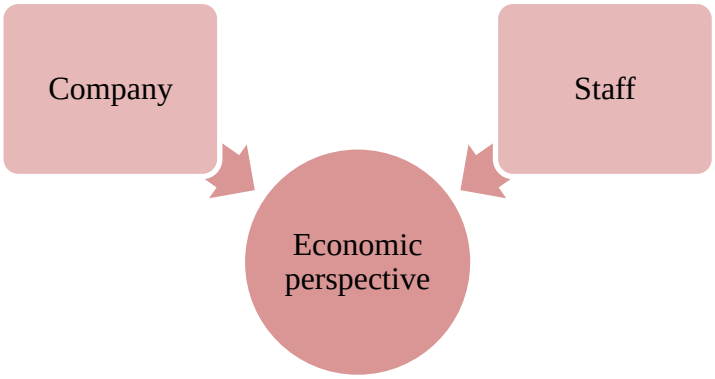

Figure 5.5 The Stakeholders Representing the Economic Perspective

So it is also important to highlight the role of an organisation's human resources, or staff, as they represent a crucial input factor for business operations working in the modern knowledge-intensive economy (Brown et al., 2013). Therefore staff are included as a stakeholder in the economic dimension of the SSM framework. However, it is not only knowledge or productivity-related data that staff provide as an input in an organisation from a sustainability perspective: it is also satisfaction and comfort, all of which when combined can be accessed through a process of evaluation resulting in increased employee happiness, efficiency and empowerment. Each of these factors strongly affects the performance of both the staff and the company in general (Dowling et al., 2008; Alkhawaja, 2015).

From a social perspective, there are two types of stakeholders that are included in the SSM: the customers and the community (see Figure 5.6). The importance and role of the customers here is more than understandable, as they are receivers of the created value in the social network mentioned above, which means that they can have a significant impact on the creation of the products and services provided (Marr, 2009). These can furthermore be used in a process of market analysis, for example, in order to provide the foundations for continuous improvement and development that will eventually lead to increased purchasing and the retention of

customers (Kumar and Shah, 2015). In other words, newly created products and/or services in which the customers were involved can lead to increased customer loyalty, which can be used as a credible and objective measure of performance of the customers in an organisation (Wilburn, 2007). The communities, as a wider set of external stakeholders with a supportive role, have become more and more important for the organisational lifecycle, especially in terms of providing and controlling resources related to social capital (Wells, 2013). These can include a variety of inputs that drive, enable or support the social networking described above, such as an organisation's website, various publications and public support, through which the process of community engagement can lead to significant outcomes, such as cash or in-kind sponsorships, that are valuable to the organisation.

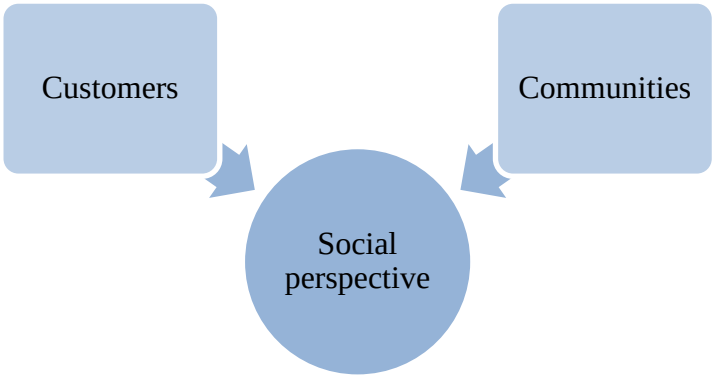

Figure 5.6 The Stakeholders Representing the Social Perspective

The third perspective used in the construction of the framework developed in this research is the environmental one. This is represented with two stakeholder groups: the government and the environment (see Figure 5.7). Here, the role of the government is crucial as it provides policies and regulations as inputs that represent the legal standards set for the company. These standards are resources that should be controlled (Carroll and Buchholtz, 2014). The control can be manifested through numerous ways, one of which is the process of benchmarking best practices, which can lead to informative decisions aimed at the improvement and/or maintenance of the competitive advantage and position of the organisation. The environment as a stakeholder also focuses on the creation of value in regards to the prevention of degradation of ecological resources. This can bring a substantial benefit to the organisation, as "green" business activities have become

an important tool for generating competitive advantage in recent years (Esty and Winston, 2009). Indeed, the achievement of green certification has been widely recognised as a measure of good environmental performance, where procurement inputs place more emphasis on the sustainability, addressing specifically issues required for the achievement of certification (Kibert, 2012).

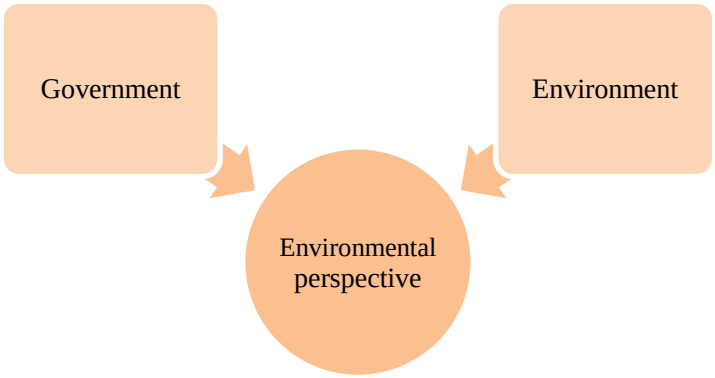

Figure 5.7 The Stakeholders Representing the Environmental Perspective

These three perspectives of sustainability have been used in various models and frameworks for assessing sustainability, especially in the built environment. However, an analysis of ranking systems in practice has shown that a significant number of sustainability indicators are left unattended, and that particularly the socioeconomic dimension needs to be improved. In alignment with this need, the International Institute for Sustainable Development (2004) and Constructing Excellence (2004) have emphasised the role of stakeholders, as they have been found to be primary factors in sustainability issues. Their role has been evident from both an external and an internal perspective (see Figure 5.8), where the internal perspective refers to the assurance of a good flow of knowledge and information and the external perspective is much broader and refers to the assurance of the long-term success of the business organisation (Szekely and Dossa, 2014). In other words, the stakeholders have an extensive impact on the inputs, processes and organisational sustainability outcomes (Chereja et al., 2013).

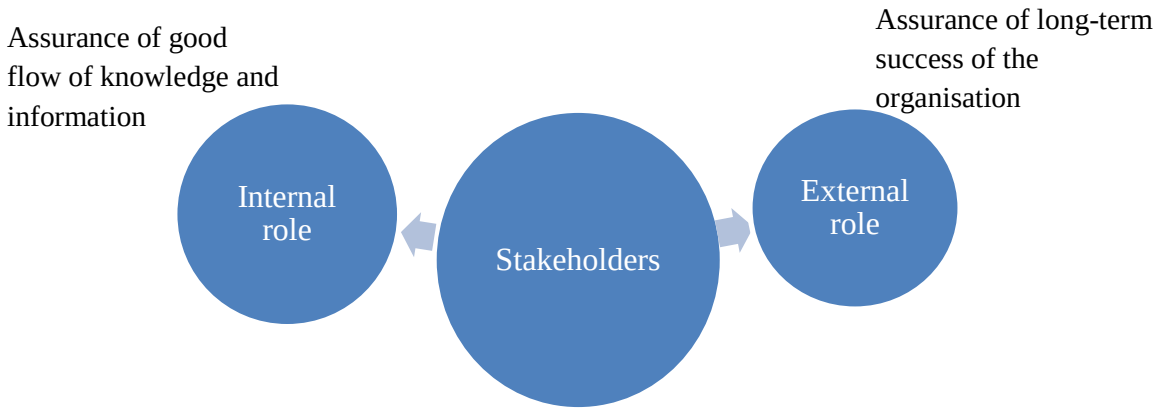

Figure 5.8 Internal and External Perspective of the Role of Stakeholders

But, even more important than their roles is the engagement of these stakeholders through their inputs, processes, outputs and performance. This is critical for the success of an organisation's sustainability strategy, particularly for new initiatives, as it depends tremendously on the requirements, needs and expectations of the external stakeholders (Bal et al., 2013). This is further supported by Steurer et al. (2005), who claim that the sustainability development of an organisation is strongly dependent upon the stakeholders and their management.

It is important to note here that the stakeholders' impact is influenced by and dependent upon their very own inputs, processes, outputs and performance, which is why these have been chosen to represent the backbone of the SSM itself. More specifically, it is the inputs and processes of stakeholders that allow for improvement of business sustainability results, which is monitored and measured through an assessment of their performance. Namely, their inputs and processes provide the LOGIC behind the framework developed in this research, which is composed of five dimensions: Learning, Oversight, Guidance, Information and Culture (see Figure 5.9). Here, learning is important for sustainability as it provides the foundations for continuous development and improvement in all aspects related to the selected group of stakeholders. Oversight emphasises the responsibility of these groups of stakeholders for ensuring the effective utilisation of the resources of the organisation as they were stated above (i.e. the company controls the monetary resources, staff control the knowledge and information resources, the government controls the legal resources, etc.), while guidance refers to the role of

these stakeholders in the creation of the overall business strategy in terms of the establishment of priorities, making choices and identifying risks. Information provided by these stakeholders can also be considered as a critical input for organisational sustainability, due to its underlying principles of transparency and consistency on the one hand, and the impact of this information of the oversight, guidance and learning as they were mentioned above on the other. Finally, the role of these stakeholders is evident in their impact on the corporate culture, which not only influences the sustainability practices and results of an organisation, but is also pivotal in the creation of trust both within and outside the organisation (Argüden, 2010).

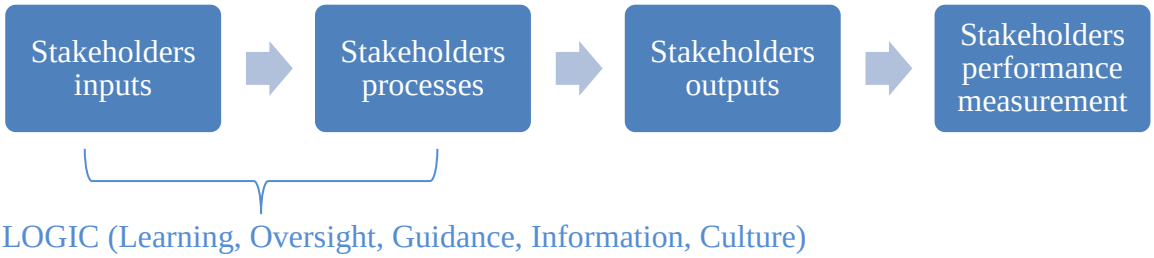

Figure 5.9 The Logic behind the New Proposed SSM Framework

The SSM therefore uses the inputs, processes and outputs of the selected stakeholders in order to provide logical and objective grounds for measuring their performance, which is conducted through the use of proven and validated measuring and assessment tools. Based on this measurement, each of the stakeholders is assigned a star rating, which enables the calculation of the overall sustainability progress of the organisation in a clear and understandable manner. All stakeholders are given equal weight, and so individual groups are not minimised or discarded.

5.2.4 Relationship to Energex Case Study

In order to assess the applicability of the SSM in the case of Energex, it is necessary to take into consideration the two dimensions of the matrix that were mentioned above: the input-process-output-performance dimension and the stakeholders dimension.

In relation to the first dimension, operating, the input-process-output-performance model can be applied to Energex as the foundation of its operations management. This is evident in all aspects of the company and particularly in its business

performance strategy, which is directed at the delivery of prudent and efficient business outputs through investments on more sustainable levels as inputs and increasing the operating efficiency through process improvements (Energex Limited, 2012).

In addition to this, Energex uses the power to perform framework, which sets the foundation for building high-quality and consistent objectives, performance conversations and performance ratings (Energex Limited, 2012). However, it is also important to emphasise the recommendations made by the Independent Review Panel on Network Costs, which was created under the Interdepartmental Committee on Electricity Sector of Australia specifically to assess and provide guidelines for the optimal business structures and the improvement of the efficiency of the network capitals of GOC (government-owned corporations) of distribution network businesses such as Energex and Ergon Energy. One of the key recommendations made by the panel referred to the placing of the business operation's focus not only on inputs or outputs, but on the relationship and mutual dependence between the inputs, process, outputs and performance, evident through the requirements for benchmarking against both domestic and international best practices (IRPNC, 2012).

The second dimension of the matrix offers an even better foundation for the applicability of the framework in the case of Energex. The reason for this is that Energex places a strong focus on sustainability and, moreover, the company places a specific emphasis on all of its stakeholders including the company, staff, customers, community, government and environment. Indeed, the focus of Energex on these specific stakeholders is self-evident, for example, through the company's annual performance reports, which emphasise how Energex has delivered balanced and sustainable results and also identify the customers and communities, the employees, the government and regulatory bodies, and the environment as the main stakeholders of the company (Energex, 2014).

As well as being mentioned in the annual performance reports, the importance of these stakeholders to Energex is emphasised in the company's sustainability reports. For example the 2010/2011 Sustainability Report not only highlights these six groups of stakeholders, it is focused solely on them (see Figure 5.10). The company as a stakeholder is addressed through a report of the company's usage of materials and resources, the employees are addressed through the workplace

sustainability section of the report, the customers, communities and the environment have their own separate sections, while the government is addressed from several perspectives (Energex, 2011; FKP Limited Video Blog, 2012).

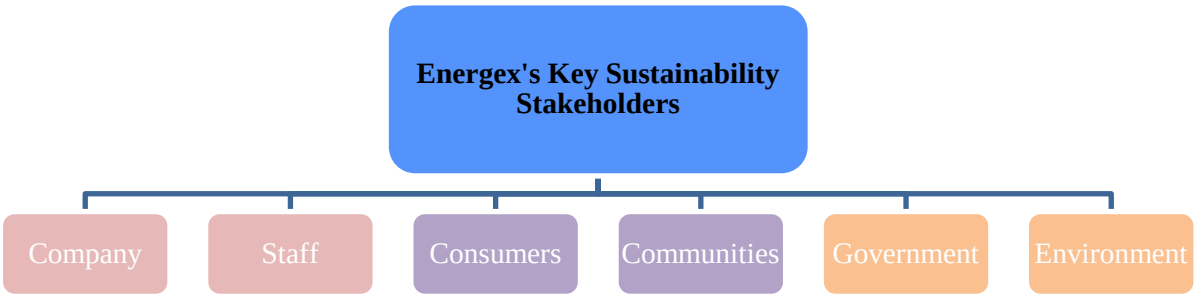

Figure 5.10 Energex's Key Sustainability Stakeholders

How the importance of these stakeholders to Energex from a lense for sustainability is made clear in the company's corporate sustainability policy. The purpose of this policy is to both guide and influence the approach to sustainability of Energex. This guidance is focused on four key areas: corporate governance, customers, people and safety, and the environment (see Figure 5.11). The corporate governance area includes a focus on the financial performance of the business and the role of the government as the creator and driver of the regulatory environment of the company, the people and safety area includes guidelines referring to the relationships between the company and its employees and communities, while the customers and environmental areas clearly define the approach of Energex towards these stakeholders and the importance that they have for the business in general (Energex, 2014a).

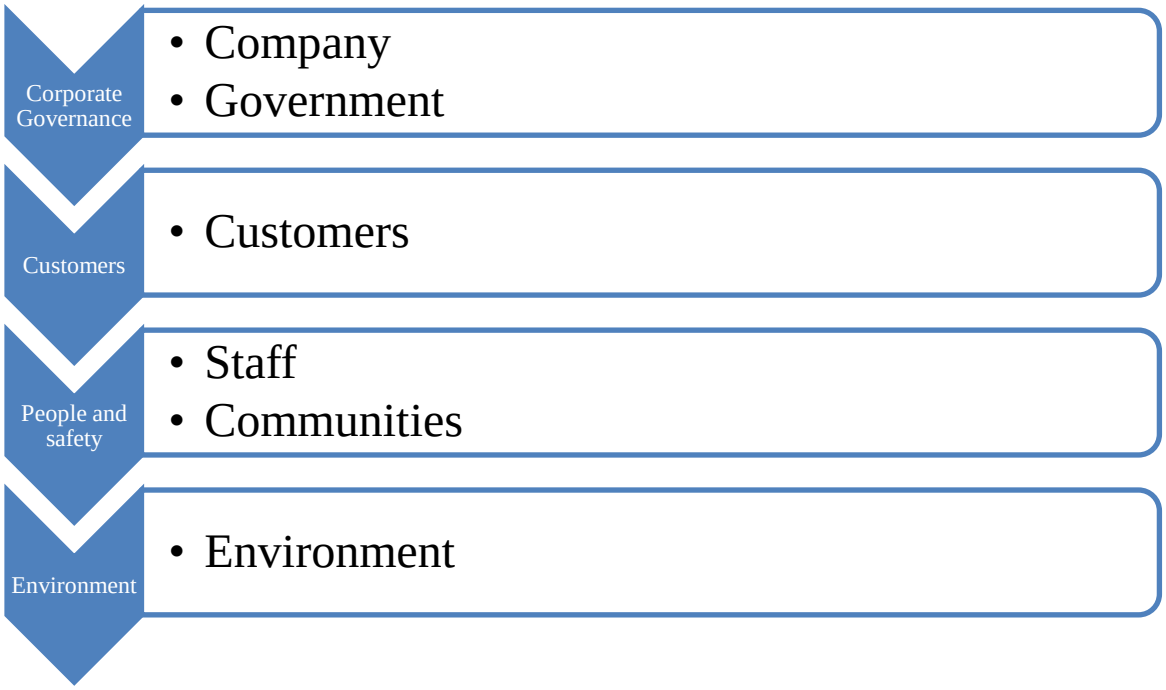

Figure 5.11 Energex corporate sustainability policy key areas

Having outlined the two dimensions of the SSM developed in this research in relation to Energex, it becomes clear that the conceptual framework is not only applicable to the company, but is also very suitable for use through an assessment of stakeholder satisfaction, due to its strong linkage to the underlying aspects of the business such as the general operational model and the stakeholders related to sustainability that the company has identified and targeted. Due to this, it can be stated that the major issues related to sustainability rating models, such as credibility and objectiveness, are being addressed, thus making the SSM an appropriate and reliable model for providing a sustainability performance rating for Energex.

5.2.5 Economic, Social and Environmental Criteria

As it was discussed above in detail, each of the stakeholder groups that are included in the SSM are inextricably linked to a specific sustainability area. For example, the company as a stakeholder has a tremendous influence on the economic aspect of an organisation in terms of controlling resources related to financials, such as funding and revenues (Haberberg and Rieple, 2008). Furthermore, it was also stated that the staff of an organisation are a crucial influencing factor for the business operations in general (Brown et al., 2013). From a social perspective, customers were addressed in terms of their influence over the

business operations as a result of their role as receivers of produced value in the social network created by the business (Marr, 2009), while the role of communities was emphasised in terms of providing and controlling social capital (Wells, 2013). Finally, the environmental aspect emphasised the role of the government as the creator of regulations and policies that set the legal standards for the business' behaviour and operations (Carroll and Buchholtz, 2014) and the role of the environment in terms of defining and implementing green business activities that are considered an important source of competitive advantage (Esty and Winston, 2009).

TBL sustainability emphasises the importance of all three aspects for long-term business success (Savitz, 2012), and set the underlying principle for the SSM. More specifically, the paradigm of this concept (as shown in Figure 5.12) underlines that the ultimate success of a business depends upon the performance of the company in each of these three key areas (pillars) on one hand and the need for measuring, calculating, auditing and reporting this performance on the other (Epstein and Buhovac, 2014).

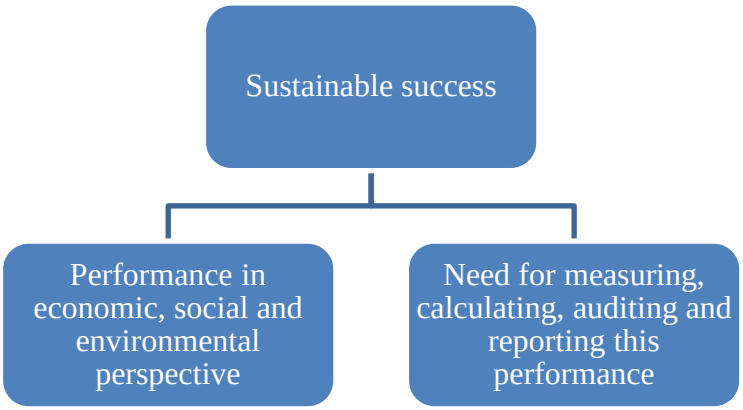

Figure 5.12 Requirements for the Achievement of Sustainable Organisational Success

The use of TBL in the conceptual framework is considered critical not only for the success of the SSM, but also for its impacts on the overall strategy of an organisation, and thus on its overall performance. There are two main reasons for this. The first one is related to the recognised strength of the TBL approach for the identification of changes that are feasible, necessary and offer significant business opportunities for the organisation that enable the transformation of sustainability into a strategy (Jackson et al., 2011). The second reason is the close relationship between TBL and the stakeholders of an organisation, which enables further

strengthening of the relationship between the organisation and its stakeholders. This is supported by Ekwueme et al. (2013), who stated that TBL allows the stakeholders to be well informed about all of the activities that an organisation is engaged in, increasing the understanding of the organisation as a whole and allowing the stakeholders to monitor the actual effect that the organisation's activities have on their environment. This in turn increases the understanding of the organisation's place and impact and allows organisations to minimise the effect they are having on the environment through close cooperation and consultation with the stakeholders.

The key term that underlies the ideas and concepts discussed previously in this chapter is, undoubtedly, performance. This is understandable, as it is no longer enough for companies to just take into consideration the needs and expectations of their various stakeholder groups, and to simply demonstrate their overall fulfilment of set obligations towards these stakeholders. It is of equal importance that companies take into account the underlying premise of modern management, which states that if something cannot be measured, it cannot be managed (Kaplan and Norton, 2004).

With this in mind, it becomes evident that the performance in each of the three area aspects representing the pillars of sustainability should be measured in such a manner that it will transparently show to managers exactly how well the organisation does in each particular aspect (Wilhelm, 2013). It is important that these pillars be addressed both separately and as an integrated system, which means that their mutual relationships should be taken into account. This is further supported by Symons and Lamberton (2014), who stated that the often-used disaggregation process that divides sustainability into its three main dimensions leads to a loss of meaning, thus emphasising the importance of taking into account the mutual relationships between the three dimensions. The SSM enables this by expanding TBL into a quadruple bottom line (or QBL) system, as it is shown in the following diagram (Figure 5.13).

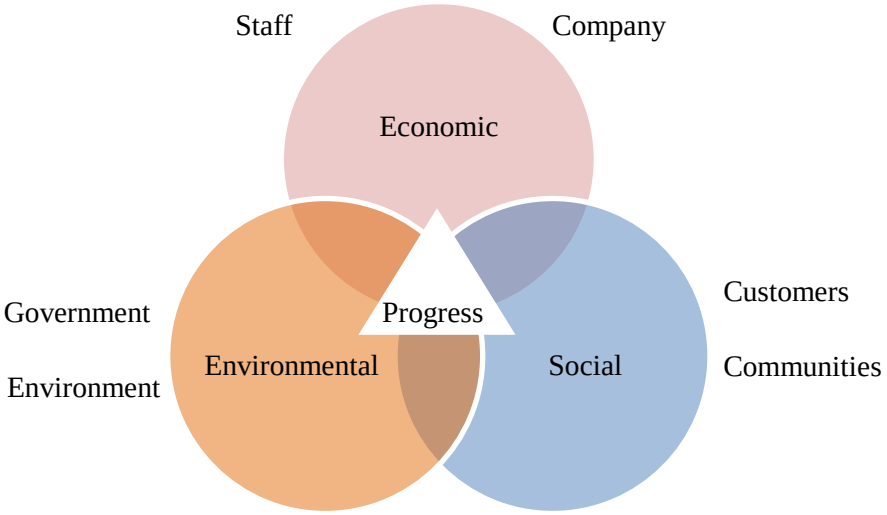

Figure 5.13 The Quadruple Bottom Line

The diagram clearly shows the introduction of a new element represented by the intersection of the three main pillars of sustainability: the element of progress. Its main role is not only to demonstrate the close relationship between the three pillars, indicating why it is necessary to take all of them into account, but also enables the provision of an effective focus in terms of what problem it is attempting to solve (Marchettini, 2014; Beech, 2013).

The intersection of the three sustainability dimensions in the QBL approach can also be interpreted as a function of context and time, emphasising the changing nature of the three sustainability dimensions as measurement elements of the organisational performance. This not only takes into account the need for understanding sustainability and TBL as being dynamic rather than static, but also enables a congruence between the external and internal stakeholders of an organisation in terms of what should be measured in regards to the sustainability performance of the organisation (Fauzi et al., 2010).

According to El Maraghy and El Maraghy (2014), the use of QBL is of great importance for decisions in the built environment, as it is an industry characterised by fierce competition. Due to this, organisations from those industries need to focus not only on personalisation and customisation in order to achieve sustainability, but should also focus on continuous innovation, while at the same time producing socio-technical and environmentally friendly products. Indeed, as it was emphasised above, the input, process, output and performance of a

stakeholder represents elements of a single chain (Pangarkar, 2011), as shown in Figure 5.14.

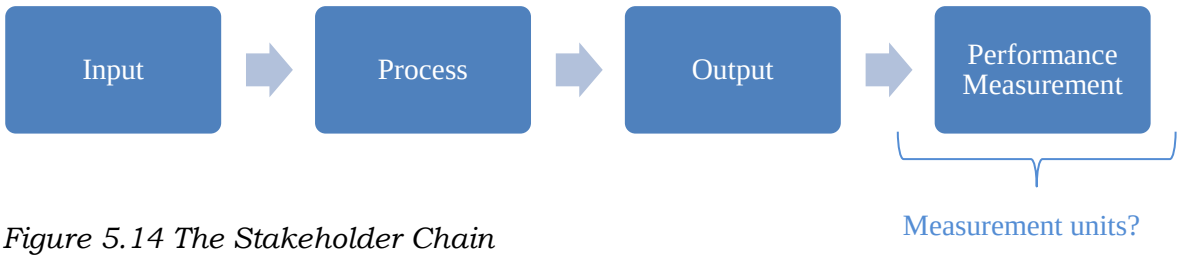

Figure 5.14 The Stakeholder Chain

But, while the inputs, processes and outputs of the various stakeholders are relatively clear, the question of performance raises a significant challenge in terms of units of measure, as a common measurement unit is required for each of the three sustainability pillars. This is reflected by the knowledge gap focused at the completion of the literature review. The challenge arises as a result of the different nature of the pillars: the economic one can clearly be measured in money, but the question is whether the social and the environmental aspects should be measured in another way (Epstein and Buhovac, 2014).

While the monetary approach has received numerous critiques, especially from a philosophical perspective and in terms of setting the value of various social and environmental factors, another approach that offers a much more realistic foundation for measurement is the use of indexes. In SSM, each stakeholder's performance is measured with an index which eliminates incompatibility and broadens applicability of the performance assessment. It offers a universal accounting method which can be used on different companies, in different industries and in different markets (Bell and Morse, 2008).

The main issue that is important is that regardless of the variety of indices used for measuring the performance of stakeholders in each of the three sustainability pillars, these can be quantified through a single measuring system represented as a star rating (Neely, 2007). This means that the use of a unified star rating system enables the assessment of sustainability 'progress' as the common measurement unit allowing for an easy calculation of value that gives a logical and clear understanding of the business in terms of sustainability.

A more detailed explanation of the star rating system as a measure of progress is presented in the following section.

5.2.6 The Star Rating System

The star rating system used in the SSM is relatively simple and based to an extent on the Green Star rating system used in Australia. The main reason for this is because the Green Star rating system has a proven record of practical application and it is easy to understand and to relate to the concept of sustainability in general. The Green Star rating system is represented in Figure 5.15.

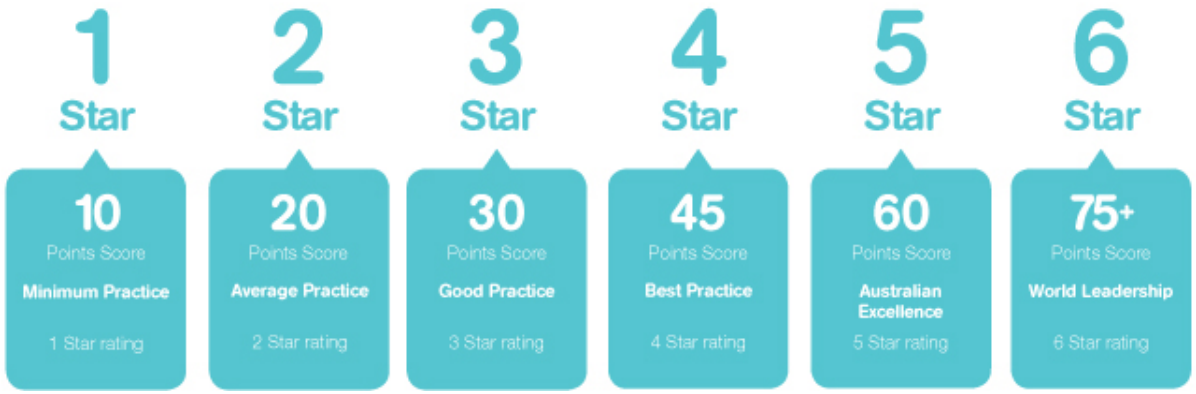

Figure 5.15 The Green Star rating system

Source: GBCA (2015)

The star rating system of the SSM is also based on a 6-star scale. Depending on the value received after the assessment, the appropriate number of stars is awarded to each index. The classification of stars in the SSM is shown in Table 5.2.

Table 5.2 Stakeholder satisfaction star rating score

	Stars	Classification
1	★	Poor
2	★★	Below average
3	★★★	Average
4	★★★★	Good
5	★★★★★	Excellent
6	★★★★★★	Leading

Take for example hypothetical Company H. The progress of Company H in terms of sustainability is assessed based on the average of each stakeholder star rating. In other words, if the PP index has a star rating of 3, the WEI a rating of 4, the CLI a rating of 4, the CSR a rating of 2, the EIL a rating of 3 and the 3L a rating of 6 stars, then the overall stakeholder satisfaction of Company H will be calculated as shown in Table 5.3.

Table 5.3 Stakeholder Satisfaction Rating Scale

Stakeholder Group	Measurable Performance	Star Rating	
Company	payback period (PP)	★★★	
Staff	workplace ecology index (WEI)	★★★★	
Customers	customer loyalty index (CLI)	★★★★	
Community	corporate social responsibility (CSR)	★★	
Government	extent of influence and leadership (EIL)	★★★	
Environment	long life, loose fit and low energy (3L)	★★★★★★	
$\bar{X}$ (PP +WEI+CLI+CSR+EIL+3L)		(3+4+4+2+3+6) / 6	
	Progress	3.66 = "★★★★"	**Good**

5.3 The Six Stakeholder Groups of the Conceptual Framework

5.3.1 The company

It is important to understand that when looking at stakeholders' satisfaction and the impact of stakeholders on the sustainability of a business initiatives (such as procurement of a new corporate headquarters), the input, process, output and performance of that stakeholder should be considered as a single chain. The case where the company is the stakeholder is represented in Table 5.4.

Table 5.4 The Elements of the Company Chain

Stakeholder Group	Input	Process	Output	Measurable Performance
Company	Investment costs and projected benefits	Cost-benefit analysis	Discounted cash flow (minimum 30 years)	Payback period (PP)

Cost-benefit analysis has been chosen as the process in this stakeholder chain due to its close relationship with sustainability as represented by the notion of efficiency, which is the core of this analysis and can be also considered as the core of sustainability in terms of assessing whether an investment will bring greater

benefit than the costs over time (Fuguitt and Wilcox, 1999). This research uses the payback period (PP) as the measure of performance. Representing the length of time that is required for the recovery of an initial investment (Ehrhardt and Brigham, 2013), PP provides the means for quantifying discounted cash flows, thus enabling the measurement of an organisation's success through its economic position and ensuring the foundations are in place for improving economic efficiency.

The assessment of the PP is achieved using a clear mathematical approach that has already been proven to be very useful, particularly in terms of energy efficiency (Ellis and Bosi 2000; Goswami and Kreith, 2007; Krarti, 2010). However, a novel perspective of PP is presented in the SSM, which emphasises the strong relationship between the investment costs and the projected benefits of a building, the cost-benefit analysis, and the insurance of overall business sustainability through increased economic efficiency. A six-star rating system is applied to make the results more meaningful and to enable the measurement of the performance of the business in meeting the needs of the company. The performance is indicated by looking at the number of stars earned. A six-star rating will be the highest under this system and will represent leading performance.

5.3.1.1 Payback Period and the Star Rating System

PP is one of the most commonly used appraisal tools for assessing capital budgeting investments in projects, especially in cases where the criteria of time risk, liquidity and profit evaluation are considered to be of utmost importance. What is important to emphasise here is that as this tool is not related directly to the profitability of companies, it is less likely to be used as a measure of performance in general. This is implied in the very definition of the tool, which states that the PP is the time that is required for recovering the initial investment. Hence, it does not allow for the measurement of the profitability of the investment. It is a financial appraisal tool that emphasises the concern of the managers about liquidity and the need for minimising risk through the rapid recovery of the investment. Theoretically, a value is chosen as a maximum PP which acts as a criterion for choosing investment options. Any investment that offers a PP within the set criterion would be desirable. Due to the reasons of liquidity and minimising time risk that were mentioned above, it is wise to set the criteria between two to four years (Hawawini and Viallet, 2010).

However, there are numerous projects, such as green buildings, that have a long-term nature and whose benefits accrue in a period that is well beyond what is considered a desirable PP of two to four years. Therefore, when considering green buildings or other major infrastructure, the selection of the value for PP should be done in a sophisticated manner, looking more at the long-term and weighing the benefits it offers with the costs. In addition to this, it is important to emphasise that in such projects, the PP is associated with the discounted cash flow and can be considered as an approximation of the internal rate of return (IRR), as it is reciprocal to this value, thus making the PP a viable tool for measuring the general performance of a company (Awomewe and Ogundele, 2008).

For these reasons, PP is not only easy to use and relevant for this research but also very important for the financial appraisal of projects and the performance measurement of companies. This is related to the fact that the largest obstacle in the development of sustainable buildings is the perception that the costs of green construction are higher than the benefits. While this perception is sometimes accurate in that green buildings can have significantly higher initial costs, these costs are recouped over the lifetime of the buildings, for example through reduced energy consumption, emissions reduction, water consumption savings, operations and maintenance savings, and productivity and health gains. Acuff et al. (2005) used the example of a lighting retrofit of a commercial office building that covered an area of 10,000 square feet (approx. 1,000m^2). According to their calculations, the installation of electronic ballasts and high efficiency lamps in the building cost about $13,000 (calculated by multiplying 266 fixtures at a price of $50 each). The annual energy savings of the lighting retrofit are projected at about $4,800 (calculated by multiplying the energy consumption of 80,000 kWh and the average price of $0.06/kWh). The simple use of PP in this case shows a breakeven point of 2.7 years (i.e. $13,000/$4,800), which falls into the above stated preferred timeframe of between two and four years.

A survey conducted by Siemens regarding energy investments found that 15 per cent of respondents expect that the PP for investments like a lighting retrofit be in the range of two to five years. Another 10 per cent expected the payback period to be even shorter than that, while 35 per cent pointed out that the return on investment (ROI) depends on the projects and should be calculated in accordance with the specific circumstances (Siemens, 2010).

This again points to the need for a more sophisticated way of selecting the value for PP in the case of built infrastructure. From the perspective of application in relation to this, practices vary across the globe. For example, in the US, it was found that the preferred PP of green buildings is between nine and 15 years (Henn et al., 2013). A report released by the Commercial Real Estate Development Association in 2009 indicated that the PP for green buildings can range from nine to 25 years, however if a period is too long then it may not maintain the interests of many developers and companies (Rahim, 2009). In Canada, the most reasonable value for PP of new green buildings is considered to be eight years (CGBC, 2014), a value that also represents the average global PP for green buildings (IGBC, 2013). A survey conducted by the Turner Construction Company in 2012 found that most companies expect the PP to be in the range of between three and nine years, as shown in Figure 5.16 (TCC, 2012).

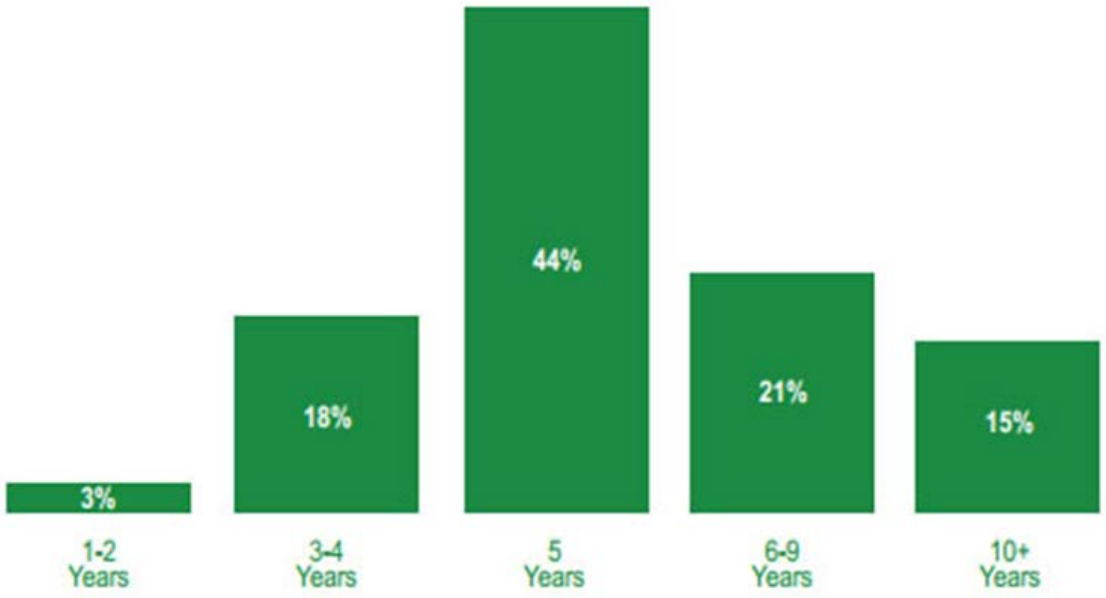

Figure 5.16 Maximum Acceptable Payback Period When Incorporating Green Features

Source: TCC (2012)

This is also supported by Urbecon (2008), in which it is stated that it is not necessary that the PP of an investment in green building is always long due to high investment requirements. It may range from several months to three years. The report provided examples of the ING Bank, Netherlands, and Four Times Square, New York. Yet another study of green buildings in India also indicated that green buildings which have achieved green certification or status have a PP ranging from

three to seven years (Lang and Meghraj, 2008). For example, energy and water investments have relatively short paybacks of five or fewer years (GBC, 2015; The Mindful Word, 2012) and they are quickest and relatively simple to implement.

The proposed star values in this conceptual framework relating to the length of the PP are assigned as follows in Table 5.5:

Table 5.5 Company's Star Rating

Payback period	**≤ 2 years**	**≤ 5 years**	**≤ 10 years**	**≤ 15 years**	**≤ 20 years**	**20 + years**	**Never**
Star Rating	★★★★★★	★★★★★	★★★★	★★★	★★	★	**nil**

A PP of 0-2 years will represent a six-star rating, reflecting leading performance of the investment, whereas a no payback will not be awarded a star rating at all. The above table can be very easily used to identify the star rating in relation to PP. A five-star rating, for example, means a PP greater than 2 years but less than or equal to five years.

This provides a clear link between the input of the company as a stakeholder and the selected payback for measuring performance. However, without the discounted cash flow as an output, PP can only be used for assessing time risk and liquidity, not profitability and, thus, not performance. This provides a clear link between the discounted cash flow as an output and PP as a performance measurement. Lang and Meghraj (2008) further supported the linkage between the input, process, output and PP as a performance measure in the case of the company as a stakeholder. They point out that it is not sufficient to simply invest in green aspects (input) - it is also necessary to conduct a cost-benefits analysis (process) that takes into account the green certification level that the building would achieve, the operational costs savings and the opportunities for revenue generation. Once this is done, a discounted cash flow analysis (output) is a good method to use for calculating PP of the procurement decision. This suggests that the value of the payback method depends upon the input, the process and the output. The use of a discount cash flow indicates that PP is actually discounted PP, which is considered a more robust measure.

5.3.1.2 Example of the Payback Period Method in Practice

To enable a better and clearer understanding of the application of PP as a performance measurement for the company as a stakeholder, an overview of the method in an actual example (a green project) is provided here.

The green project used for this analysis is the City of Gosnells Civic Centre Redevelopment Project. This project had the purpose of providing an environmental and an economic overhaul to the Centre's building, which was built in the 1970s. The project's initial investment was $26 million, out of which $750,000 or 3 per cent was used for ensuring a sustainable retrofit. The project covered an area of 4,500 m^2 with an additional area of 500 m^2 in civic space that included function rooms, council chamber, a dining area and meeting rooms (GBCA, 2013).

In terms of stakeholder analysis, the project's input was the investment cost ($750,000) and the projected benefits of reduced energy and water consumption, improved management, improved indoor environmental quality, reduction of emissions and increase of innovation (GBCA, 2013). In order to examine the process and the output of the stakeholder, the issues of energy and water reduction are used. The reduction of water usage was projected to be about 35 per cent, while it was estimated that each year the Civic Centre was able to save up to 315,000 kWh of energy (GBCA, 2013).

For the cost-benefit analysis and discounted cash flow calculation, the average price of kWh energy in Australia of about 30 cents per kWh in 2014was used (CME, 2012). When this value is multiplied with the projected energy savings of $315,000 kWh on an annual basis, it is calculated that the Civic Centre building saves up to $94,500 per year on energy bills alone. However, these clear financial benefits are only a part of the saving (about 30 per cent of the total savings), while the remaining 70 per cent are attributed to health benefits and increased productivity (Urbecon, 2008). These calculations support the use of PP as a measure of performance.

An investment can be appraised using PP, enabling evaluation of the time period it takes for an investment to payback. Table 5.6 shows cumulative cash flows for the energy investment which would assist in computing PP for the case study:

Table 5.6 Accumulative Cash Flows for Energy Investment

Year	Annual savings ($)	Accumulative Cash flows
0	-750,000	-750000
1	94,500	-655,500
2	94,500	-561,000
3	94,500	-466,500
4	94,500	-372,000
5	94,500	-277,500
6	94,500	-183,000
7	94,500	-88,500
8	94,500	6,000
9	94,500	100,500

Based on the computations above, the simple PP for the energy investment is 7 years 11 months. However, simple PP has one substantial drawback: it doesn't consider the time value of money. To resolve this issue, it is wise to consider discounting to compute PP for the energy investment. For discounted PP, the most important thing is to choose an appropriate discount factor. A real discount rate needs to be evaluated based on interest rate conditions after inflation. Considering this fact, the discount factor assumed in this case will be about 2%. Table 5.7 shows the cumulative discounted cash flows for the energy investment that would allow for the computation of the PP after considering time value of money.

Table 5.7 Discounted Cash Flows for Energy Investment

Year	Annual savings ($)	Discount Factor (2%)	Discounted Cashflows	Accumulative discounted cashflows
0	-750,000	1	-750,000	-750,000
1	94,500	0.9804	92,648	-657,352
2	94,500	0.9612	90,833	-566,519
3	94,500	0.9423	89,047	-477,471
4	94,500	0.9238	87,299	-390,172
5	94,500	0.0328	3,100	-387,073
6	94,500	0.0176	1,663	-385,410
7	94,500	0.0096	907	-384,502
8	94,500	0.0053	501	-384,002
9	94,500	0.7477	70,658	-313,344
10	94,500	0.8401	79,390	-233,954
11	94,500	0.9004	85,088	-148,867
12	94,500	0.7885	74,513	-74,353
13	94,500	0.773	73,049	-1,305
14	94,500	0.7579	71,622	70,318
15	94,500	0.743	70,213	140,530

Based on the calculations above, the PP considering the time value of money for the energy investment will be about 13 years. To strengthen the cost-benefit analysis for the energy investment, breakeven analysis can also be used as an accounting tool for identifying the point where savings equal cost. The breakeven point will be identified by constructing a breakeven chart. The point at which the cumulative savings equal the of $750,000 will be the breakeven point. The breakeven graph for the energy investment option is illustrated in Figure 5.17.

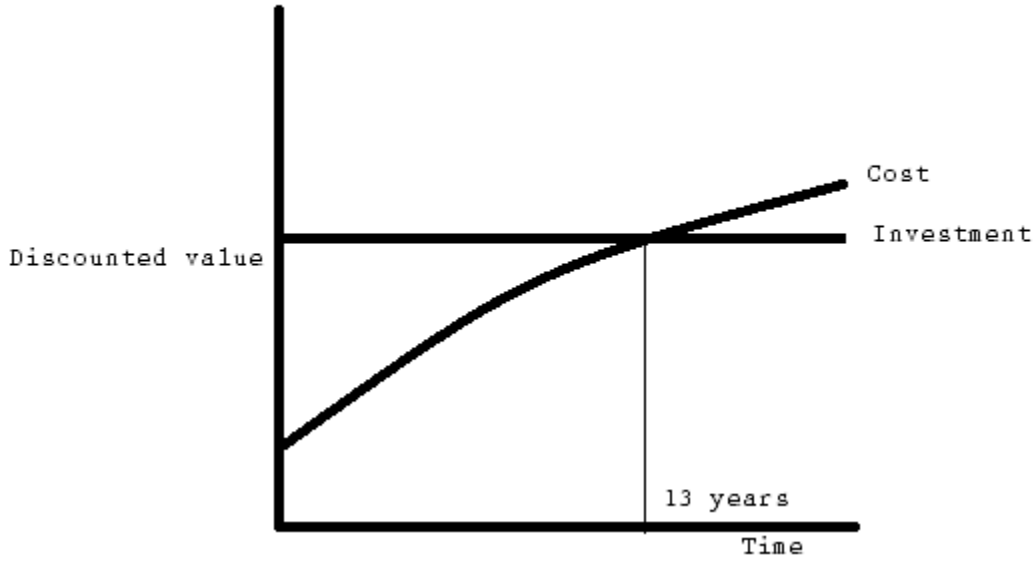

Figure 5.17 Breakeven Analysis of the Energy Investment

When the star rating system proposed in this conceptual framework is applied to this example, with a PP of 13 years using the discounted payback method, the initiative falls into a three-star rating category for this criterion.

5.3.2 The Staff

Staff, also referred to as the workforce of a business, includes all the people who and engaged within an organisation. Without the commitment and motivation of staff members, an organisation is unlikely to achieve its overall objectives (Phillips, 2003). Hence, the people working in an organisation are among the most important stakeholders of a business regardless of the industry in which it operates. Staff as a stakeholder is represented in Table 5.8.

Table 5.8 The Elements of the Staff Chain

Stakeholder Group	Input	Process	Output	Measurable Performance
Staff	Satisfaction, comfort and productivity data	Post-occupancy evaluation	Happiness, efficiency and empowerment	Workplace Ecology Index (WEI)

The SSM measures staff in the form of input-process-output relationship. Occupant satisfaction, comfort and productivity data are the inputs that a company delivers for its staff in return for an output. Post-occupancy evaluation (POE) has been chosen as a process since it allows attainment of valuable feedback from staff members about the effectiveness of the workplace in meeting the requirements and supporting the organisation (Preiser, 2013). This process involves the utilisation of interviews, questionnaires and workshops as a means of collecting feedback from staff. Without such feedback, it cannot be determined whether an organisation is successful in looking after the welfare of its staff (Preiser, 2013; Khalil and Husin, 2009). The output is happiness, efficiency and empowerment related to individual staff members. Hence, the POE method is a relevant and suitable method for the purpose of understanding the impacts that pertain to measurable staff performance.

5.3.2.1 Workplace Ecology Index and the Star Rating System

A workplace that is healthy is one performing at its optimum. Hence, workplace ecology can be defined as a study of the performance of the workplace which enables and ensures the understanding of the link between the people (human resources), the facilities (physical resources) and the environment (natural resources). This link is represented by the productivity of the workforce, which means that measuring productivity represents the best means for the quantification of the improvements in workplace ecology (Langston and Lauge-Chistensen, 2013). In return, the quantification of workplace ecology through the use of the Workplace Ecology Index (WEI) provides the best means for measuring workplace health (Alkhawaja, 2015). One of the reasons behind the selection of WEI is the fact that regardless of the nature of the business, all workplaces need to enable an effective performance of the functions of the business.

The following diagram (Figure 5.18) illustrates the interaction between the three determinants considered in WEI (happiness, efficiency and empowerment) and demonstrates how this model assists in the improvement of environmental and thus overall business performance. The diagram clearly shows that workplace ecology depends upon a balance of the three determinants, meaning that the underperformance of even one of the three determinants will have a negative effect on workplace ecology.

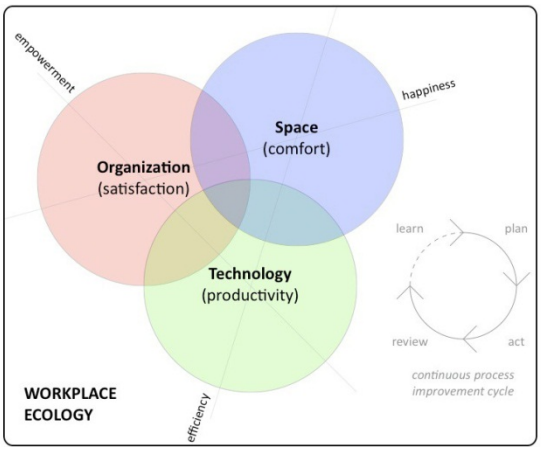

Figure 5.18 The Three Determinants of Workplace Ecology

Source: Alkhawaja (2015)

Measuring the productivity of the workforce enables an integration of the organisational, spatial and technological organisational contexts to provide the means for objective environmental auditing. People, space and IT are the three main cost centres for businesses, usually in that order. The biggest strength of these three drivers lies in their potential for delivering value to the company and to the society in general through efficient use of the resources without a reduction in the quality of service. Specifically, sustainability lies at the core of facility management, technology is critical business productivity, and employee satisfaction is at the heart of human resource management. This highlights the strength of the synergy of these components in terms of organisational performance. A healthy, happy and productive workforce leads to better outcones and greater profits for shareholders (Best et al., 2003).

The example provided above underpins the link between the input of the staff as a stakeholder (employee satisfaction, comfort and productivity) and what Alkhawaja (2015) described as workplace ecology. Vischer (2008), came to a similar conclusion, suggesting the environmental aspects of the workspace are represented by environmental conditions (lighting, noise, thermal comfort, air quality, etc.), ergonomics and layout of the furniture (offices, workstations and shared amenities), and process issues (meeting organisational and business objectives). In addition to this, there are behavioural measures that are commonly used in the study of the workspace environment. The optimisation of happiness, efficiency and empowerment leads to a high level of workplace ecology.

These values must be measured in a viable manner that will enable objective assessment. This is why POE has been selected as a process in the proposed conceptual framework. The rationale behind this choice is that POE is a tool that is capable of accurately assessing organisational spatial and technological support for workers, enabling the analysis of a building's performance after it has been occupied for some time. In fact, POE has been defined as a tool for assessing the effectiveness of the occupants of an indoor environment as it enables a systematic analysis of their environment, thus ensuring the understanding of the way in which this environment inhibits or facilitates the daily activities of the occupants (Khalil and Husin, 2009). According to Rego and Cunha (2008), happier employees are more vigorous and enthusiastic employees who are committed to their work, more active in trying to solve problems, apply more of their potential in their daily activities, take advantage of opportunities and persevere when facing obstacles, each of which contributes to significant increase of overall performance. Similarly, Meyerson and Dewettinck (2012) found that an increase in employee empowerment leads to an increase in employee performance, while Price (2011) confirms the same positive relationship between employee efficiency and performance.

What is important to emphasise here is that the happiness, efficiency and the empowerment of employees can be assessed and quantified using a POE tool. Happiness, efficiency and empowerment lead to the objective measurement of WEI which in turn enables the use of the proposed star rating system. More specifically, each of these three components can be assessed through the use of the POE tool and assigned a value in percentage (Alkhawaja, 2015). Each of the elements is measured on a scale of -10 to +10. Table 5.9 shows how the workplace eco-system can be measured at the level of an individual occupant and combined into a star rating to compare different organisational settings over time.

Table 5.9 Workforce Ecology Index scheme

Workplace Ecology	**Above 9**	**Above 7 and ≤ 9**	**Above 5 and ≤ 7**	**Above 3 and ≤ 5**	**Above 1 and ≤ 3**	**1**	**Below 0**
Star Rating	★★★★★★	★★★★★	★★★★	★★★	★★	★	**Nil**

Healthy workplaces should ideally have a rating of at least 3 stars. This translates to mean scores for satisfaction, comfort and productivity around 4 or higher. In

addition, ideally at least 75% of occupants should demonstrate that their WEI scores are positive.

5.3.3 The Customer

Without customers, a business organisation is unlikely to survive. It is important that customer needs are identified and met in the most effective way for organisational success (Phillips, 2003). Table 5.10 illustrates the input-process-output relationship for meeting the needs of customers successfully.

Table 5.10 The Elements of the Customer Chain

Stakeholder Group	Input	Process	Output	Measurable Performance
Customer	Corporate products and services	Market analysis	Retention, advocacy and purchasing	Customer loyalty index (CLI)

The input in this chain includes the corporate products and services that the business organisation provides to the customer. The provision of corporate products and services to the customer is carried out in return for customer retention, advocacy and repeat purchases, which are identified as output in the SSM. The process deployed to convert the inputs into the desirable output is market analysis. Market analysis involves studying the market and analysing the consumers' purchasing patterns and the changes in the nature of demand in the market. The analysis also indicates the likely reasons behind a pattern of sales or consumer behaviour (Gummeson, 1999). For example, a business organisation will be able to find out why a particular product or service is or is not selling well in the market. Based on the information gathered through market analysis, a business organisation can then make necessary changes in their marketing approach, processes and products or services. The process will therefore enable the organisation to achieve the desired output. Customers will be more satisfied and will purchase repeatedly from the organisation. Considering the desired output, market analysis is chosen as the process as it allows the organisation to build a business customer relationship that is long-lasting and strong. Gummeson (1999) considers relationship marketing as an important process and promotes the idea of increased business customer interactions as an important source of profitability.

Considering the importance of staying closer to the market and maximising business customer interaction in the literature, market analysis is selected as a process to achieve the desired output.

5.3.3.1 Customer Loyalty Index and the Star Rating System

Customer Loyalty Index (CLI) is the selected tool for measuring customer performance. Before explaining the relationship between the star rating system and the CLI, it is essential to first analyse the concept and meaning of the CLI in more detail. The importance of this rests upon the fact that there are two major approaches in defining customer loyalty, one emphasising an emotional perspective and the other emphasising the behavioural perspective. In other words, there is both emotional and behavioural customer loyalty, with the former being defined as how the customers feel about a product, service or a company, and the latter defined by the actions that the customers engage in when they are dealing with a product, service or a company (Chaudhuri, 2006).

Regardless of whether loyalty is approached as an emotion or behaviour, it is a process that is developed through time. This process is comprised of several steps. The first step is defining the term or establishing the meaning that loyalty has for the customers. From a business perspective, loyalty means assessing the worthiness of a product, service or company in general. The process then continues by understanding the relationship that underlies loyalty and perceptions of the customers that convince them to be loyal. Once the customer is prepared to be loyal, he or she may realise and recognise the cost of loyalty, which is also true for the company. As loyalty refers primarily to a relationship, entering this relationship is relatively easy for both parties involved, but staying in it and maintaining it is difficult as it is incurs costs on both sides. The assessment of the costs of loyalty in this process is then followed by an assessment of the benefits, which is of outmost importance for the sustainability of the relationship, and an assessment of the reward received for being loyal, which expresses how well customer interest has been served (RAI, 2014).

Alongside the loyalty development process described above, a number of factors that influence the keeping of loyalty include the underlying relationship, quality and the price of the product or service, customer service and brand value. The number of variables means that the nature of customer loyalty is complex and difficult to quantify. However, the strength of the underlying relationship is

considered as the most reliable predictor of the future behaviour of the customers, and the measurement of that behaviour is closely related to the assessment of past customer behaviour (Xu, 2005).

Two similar models have been generally accepted in business practice for the assessment of past customer behaviour: the Reichheld's model, which illustrates the components for driving company profit (Reichheld and Teal, 2001) and the Customer Lifetime Value model (Gupta et al., 2006), which is focused on customer loyalty as a mediator between the operating of the business and the value of the company. Both of these models use retention, advocacy and purchasing as reflections of customer loyalty (Kumar, 2008) that drive company profit and thus can be used as a measurement of organisational performance (see Figure 5.19; Figure 5.20). This not only validates the use of the CLI as a performance measurement, but also provides the necessary platform for the objective measurement of customer loyalty and emphasises the linkage between the output of the customers as stakeholders and the performance measurement.

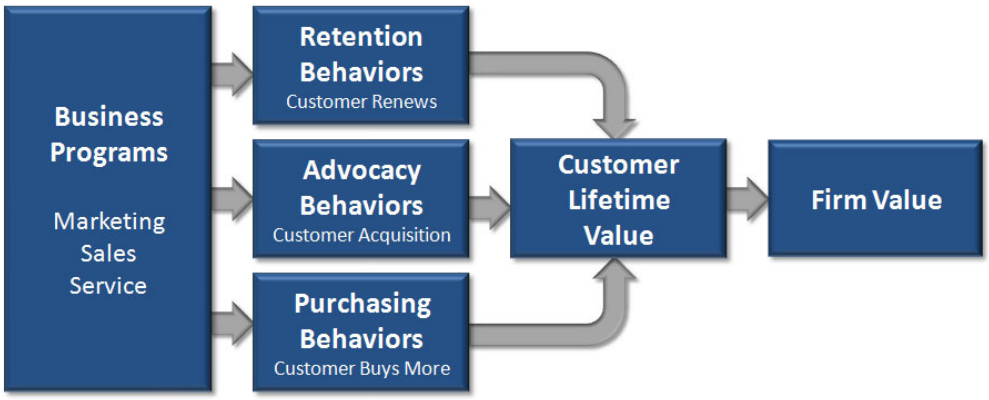

Figure 5.19 Gupta's Customer Lifetime Value Model

Source: Gupta et al. (2006)

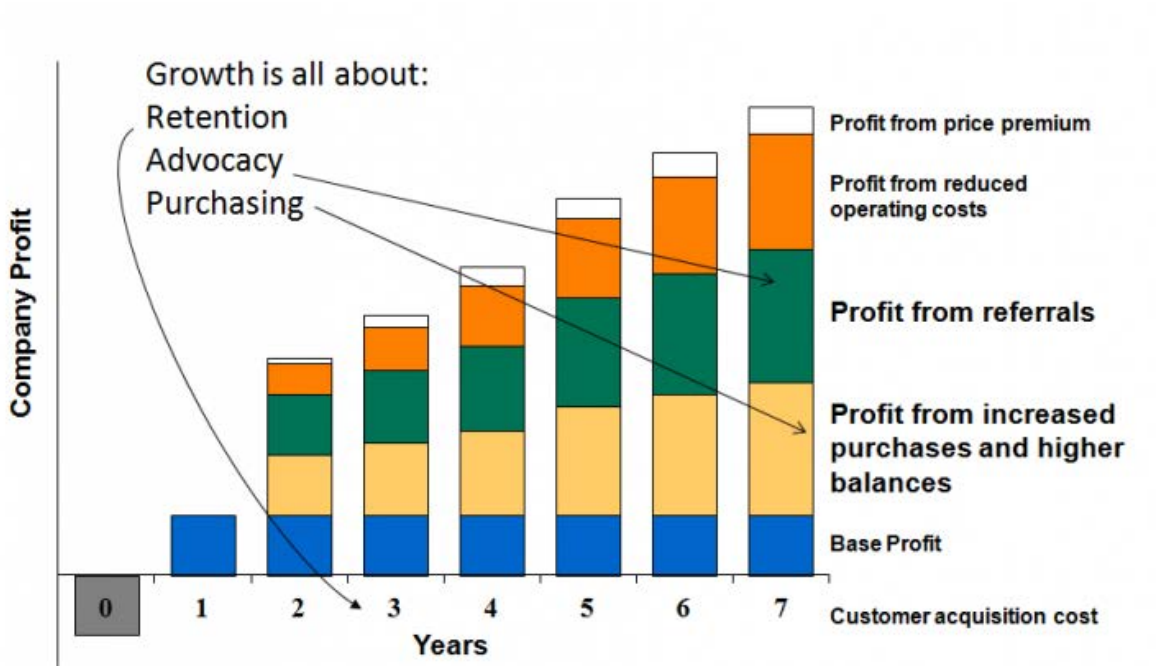

Figure 5.20 Reichheld's Model of Customer Loyalty

Source: Reichheld and Teal (2001)

It is clear that retention, advocacy and purchasing can be used for determining the value of the CLI. However, what is important to emphasise here is that these three components, as outputs of the customers as stakeholders, need to be measured adequately in order to provide a realistic value for CLI. In relation to this, it needs to be stated that these components can be measured through both objective and subjective methods, as shown in Figure 5.21, and it is important to take into consideration both of these approaches in order to ensure a realistic and justified assessment. Customer loyalty metrics can be integrated into a bigger customer loyalty measurement tool of measurement approaches and loyalty types. Each of the four quadrants indicates each of the customer loyalty metrics. When analysing the matrix model of customer loyalty, it must be noted that the subjective measurement approach is not the same with emotional loyalty. To measure behavioural loyalty and emotional loyalty, survey questions can be used. Utilising survey questions enables the collection of reliable information that results in measurement of different types of loyalty validly (Hayes, 2013).

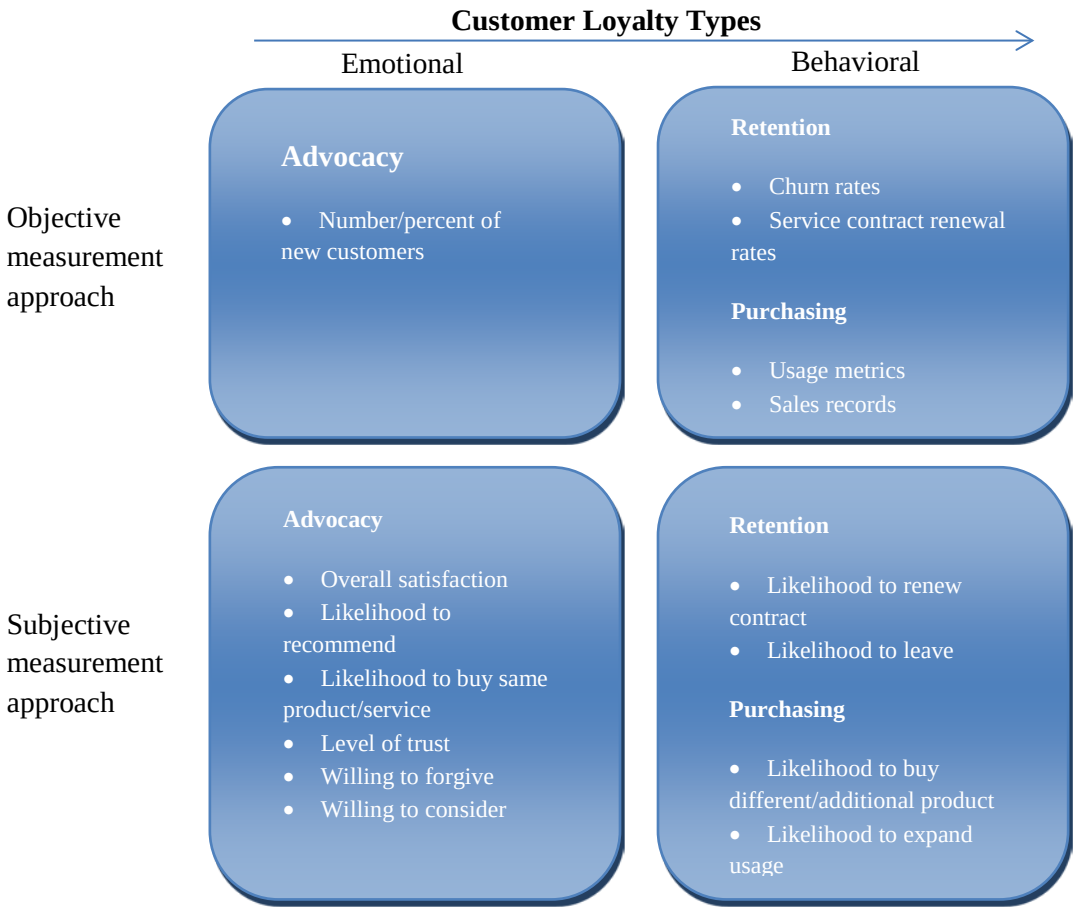

Figure 5.21 Measuring Advocacy, Retention and Purchasing

Source: Hayes (2013)

Understanding Figure 5.21 is not only important because it gives examples of actual and realistic measurement of the three components of company profit, but also because it emphasises the importance of market analysis as a process that is essential for acquiring the desired values and its linkage to both the input and output of the customers as stakeholders.

5.3.3.2 Application of the Model

Based on the discussion above, the SSM suggests that the values of retention, advocacy and purchasing, acquired through the above means, can be used to assign points for customer loyalty on a scale from 0 to 100. Each of these three components contributes equally to the CLI. The values for retention can be expressed as percentages for churn rates, contract renewal rates, likelihood for renewal and likelihood for leaving, thus enabling the calculation of an average

value. For the purpose of illustration, the following example is given for calculating retention.

Table 5.11 Retention Scheme

Retention	Assessed value	Representative value
Churn rate	17%	(100-17=) 83%
Likelihood for leaving	15%	(100-15=) 85%
Contract renewal rate	82%	82%
Likelihood to renew	87%	87%
Average retention score		(83+85+82+87)/4 ~ 85%

Given that the maximum points retention as a component can contribute to the CLI is 33, and having the average value of retention calculated at 85%, the points that retention brings to the CLI in this example equals 28 (33*85%=28.04). If the average values for advocacy and purchasing are calculated in a similar fashion, and for the purpose of illustration in this example, advocacy is measured at 82%, while purchasing is 94%, this means that the value for advocacy will be 33 as the maximum value advocacy can contribute times 82% which equals 27 points. In the same fashion, the value for purchasing will be 33 as the maximum contribution times 94% which is the measured value for this component equaling a total of 31 points. This means that the value of the CLI in this example will be 28+27+31 = 86.

This value can easily be transferred into the star rating system, with the number of stars assigned according to Table 5.12. This indicates that in the example provided above, the CLI will be assigned a six-star rating for the customers as stakeholders.

Table 5.12 Customer's Star Rating

Customer Loyalty Index							
Scale points (0-100)	85+	70-84	55-69	40-44	25-39	10-24	> 10
Star Rating	★★★★★★	★★★★★	★★★★	★★★	★★	★	**nil**

5.3.4 The Community

Business entities operate within communities and have moral obligations towards them. All business organisations have external costs and benefits and, regardless of the nature of the business, communities are significantly impacted by the

activities of such organisations (Phillips, 2003). Table 5.13 illustrates the input-process-output relationship for community as a stakeholder along with a suggested performance measurement tool.

Table 5.13 The Elements of the Community Chain

Stakeholder Group	Input	Process	Output	Measurable Performance
Community	Website, publications and other collateral	Community liaison and engagement	Cash and/or in-kind sponsorship	Corporate Social Responsibility (CSR)

Information about the organisation and its activities provided through the company's website and other media publications is considered as the input in this chain. Publications may include the provision of information on the Internet and in newspapers, magazines or companies' annual reports. Publicising information means making it available to the members of the public who make up the community in which the business operates. The information about the business and its activities is provided to the community in return for cash and/or in-kind sponsorship, which is the output in the SSM. To achieve the desired output, it is necessary to have an effective process in place. Community liaison and engagement is considered as a part of the process that will ultimately enable the organisation to achieve the desired output in return for satisfying the needs of the community.

Community engagement has been chosen as the process to achieve the desired output as it involves establishing and strengthening the relationship of the company with the community, which will result in several long-term benefits. By liaising and engaging with the community stakeholders the business can better understand the concerns and viewpoints of the community. This will enable them to take the community's needs into account and develop more innovative and better projects (Bowen et al., 2010). Furthermore, engaging with the community will minimise the chances of controversy and conflict, as the community will feel that they have been heard and are important to the company. The establishment of a better relationship with community stakeholders will also enable the company to attract talented staff and reduce lawsuits and other constraints that delay business projects (Bowen et al., 2010).

5.3.4.1 Corporate Social Responsibility and the Star Rating System

According to Sims (2003), CSR enables the exploration of organisational attitudes towards stakeholders. The ability of an organisation to serve the community in which it operates successfully can be assessed by looking at how socially responsible it is. A socially responsible business is likely to operate in a way that benefits the community in the maximum way. This is the main reason why it has been selected for use in this conceptual framework.

With this in mind, it is easy to understand that even though the approaches to understanding and implementing CSR vary, most organisations consider it in reference to stakeholders and the TBL way of thinking (Zu, 2008). This is represented through one of the most commonly used definitions of the term, which states that the main concern of CSR is treating the stakeholders ethically or responsibly, meaning that stakeholders need to be treated in a manner that is considered acceptable in society. The main goal of social responsibility is the creation of higher living standards, while at the same time preserving the organisational profitability (Hopkins, 2012).

In the context of the SSM, this definition enables not only a better understanding of CSR in general, but also provides the necessary link between the input, process and output of the community and CSR as a performance measure. The ethical or responsible treatment of the community can be explained through various organisational online and offline publications, which throughout the process of community liaison and engagement lead to cash and in-kind sponsorships. This is used as a means to empower the members of the community to address and own the changes they want in their environment (Bergstrom et al., 2011).

Using CSR as the performance measurement tool is further justified by the link between CSR and organisational success. CSR is positively related to improved organisational success (Ekatah et al., 2011). Tsoutsoura (2004) also supported this finding and stated that if a business is successful in being socially responsible, it will be able to satisfy the community stakeholders, which will eventually result in organisational success. Hence, if the ability of a business to behave in a socially responsible way is measured then the result will enable assessing the success of that business in meeting the needs of the community stakeholders. This justifies why CSR has been chosen as a performance-measuring tool when managing

relationship with community stakeholders and using CSR as a tool to appraise performance in meeting the needs of community.

An organisation that has a better ability to operate in a socially responsible way enjoys immense benefits that are highlighted several times in the literature. For example, organisations that are socially responsible not only have the ability to attract more consumers due to a positive reputation and enhanced brand image, but they are also able to attract business partners and employees that are more committed and dedicated, thus increasing the overall value of their products and services offered. Furthermore, socially responsible organisations are more transparent, hence have less risk of corruption and bribery, fines for environmental pollution, defective product recall and negative publicity that could lead to reputation damages and add significant costs in marketing or litigation. All of these contribute to the attainment of long-term organisational success (Tsoutsoura, 2004; Bowen et al., 2010).

Taking both of these aspects into consideration, it is clear that CSR is a viable tool for measuring organisational success in satisfying the needs of community stakeholders. The next important thing to consider is the way in which CSR can be assessed and measured. This is understandable, given that there is no one commonly accepted system for assessing CSR and the choice of method depends significantly on the type of the organisation and/or the industry, even though there are several approaches that have been proposed (Guo et al., 2009). The following section shows how CSR can be assessed and used to measure the ability of the business to satisfy community as a business stakeholder.

5.3.4.2 Application of the Model

In relation to the discussion carried out above and focus on the community as a stakeholder for the creation of social capital, the proposed conceptual framework emphasises the increasing expectations for organisations to 'give back to society'. Organisations need to behave in a way that they minimise the negative externalities and maximise the benefits to the communities in which they operate (Spitzer and Martinuzzi, 2013). This is why cash and in-kind sponsorships have been selected as the output in this framework.

Another reason for this selection of outputs is that cash and in-kind sponsorships can be easily quantified and assessed easily by considering the proportion of organisation profit that makes up these contributions. This will enable the use of

the proposed star rating system for assessing the CSR of an organisation. It is proposed that the cash and in-kind sponsorships are linked to the surplus of the organisation and assessed in terms of generosity, assigning points on a cash and sponsorship scale ranging from 0 to 100. The results are then transferred into the star rating system. This is best explained in Table 5.14.

Table 5.14 Star Rating System for the Community Chain

Corporate Social Responsibility							
Cash & sponsorship scale points (0-100)	8.5%+	7-7.4%	5.5-6.9%	4-5.4%	2.5-3.9%	1-2.4%	>1
Star Rating	★★★★★★	★★★★★	★★★★	★★★	★★	★	**nil**

For the purpose of illustration, it will be helpful to consider an example of an organisation that has invested in green building has and has allocated 5.75% of its profits for cash and in-kind sponsorships for the community. This means that using the values in Table 5.14, community will be rated as four stars on the rating system proposed in this framework.

5.3.5 The Government

The government as a stakeholder can also be illustrated in the form of an input-process-output chain. When considering government as a stakeholder, the most essential four elements to be considered are policy and regulation, benchmarking of best practices, competitive advantage and the Extent of Influence and Leadership (EIL) Index as shown in Table 5.15.

Table 5.15 The Elements of the Government Chain

Stakeholder Group	Input	Process	Output	Measurable Performance
Government	Government policy and regulation	Benchmarking best practice	Competitive advantage	Extent of influence and leadership (EIL)

EIL is a new concept introduced into the SSM for the first time. It represents the power of the political influence of the organisation in general or the influence the

organisation has over the government in terms of advancing and fostering its own interests and issues. But, of extreme importance for the conceptual framework in terms of practical application, is the link between EIL and the performance of the organisation.

Numerous studies have been conducted that explore the relationship between leadership and organisational performance, each confirming a positive link between the two. For example, Wang et al. (2005) pointed out that there was a positive relationship between leadership and transformational leadership in particular and individual, group and organisational performance in general. They also pointed out that transformational leadership and the exchange between the leader and the followers have a significant influence on the quality of social exchange between the two, which is important when considering the role of the organisation in a wider context, especially in relation to government. Popa (2012) supported this, stating that effective leaders can enable people and the organisation as a whole to be successful, while at the same time keeping in mind the satisfaction of the stakeholders.

Other research that confirmed the same positive relationship between transformational leadership and organisational performance was conducted by Pradeep and Prabhu (2011). According to them, this relationship can be measured through the effectiveness of the employees, their use of extra effort and their dependability and satisfaction. Shafie et al. (2013) widened the influence of leadership even more, stating that it is positively linked not only to performance in general, but to motivation, efficiency and staff morale, where the latter is particularly important from a sustainability perspective due to its ethical reference. Indeed, the long-term and sustainable success of an organisation can only be achieved through strong ethical behaviour that is derived, first and foremost, from the behaviour of the leader (Thomas et al., 2004).

However, the relationship between leadership and organisational performance is not limited to only the inside of the organisation. The same conclusions stated above are indicative, in terms of the relationship between the organisation and its wider community, and particularly between the organisation and government. According to a study conducted by Washington Post (2008), industry leaders, both individuals and organisations are opinion leaders and this status is achieved through the extent of their competitive advantage. As such, they can shape

industries and business, influence debates and studies, spread ideas and can significantly affect policy decisions. However, their most significant impact is demonstrated through their ability to inform policy, as they can influence the actions of the legislators, get laws and regulations passed and can change the rules for government bodies and agencies. This confirms the link between the input of the government as a stakeholder and ELI as a performance measure, and justifies the selection of both in the SSM.

What is of even greater importance for the justification and validity of the SSM is the link between competitive advantage and leadership on one hand, and competitive advantage and organisational performance on the other. Indeed, competitive advantage can be defined as a factor or attribute that enables an organisation to serve its customers better than its competitors, to create a better for all (Deb, 2008). Khan and Anjum (2013) noted that the main sources of competitive advantage are the organisation's culture, its technology and its effectiveness and ability to change, each of which are considerably dependent on the leadership in the organisation. This confirms a positive relationship between transformational leadership and competitive advantage. There is also a positive relationship between competitive advantage and organisational performance (Ismail et al., 2010). Blankenship (2004) not only confirmed this, but also pointed out that this positive relationship is a result of the ability of organisations to adjust their business performance through the use of business intelligence and information related to their key performance indicators, including environmental indicators, which enables them to remain competitive. Similarly, the organisation's ability to use business intelligence related to its competitive advantage enables the organisation to improve its overall performance.

But in order to be able to use competitive advantage it still needs to be measured. This can be achieved in a relatively simple manner, such as through the assessment of profit, prices, quality, flexibility, delivery dependability and innovation (Deb, 2008). Divandari and Yousefi (2011) proposed another means for the objective and realistic measurement of competitive advantage through the use of the Balanced Scorecard tool, represented by a structured report that can be used for tracking the execution of activities within the organisation. The key systematic approach includes focusing on the strategic objectives of the organisation and selecting a small number of data items to assess. These data items include a combination of financial data and non-financial data (Divandari and Yousefi, 2011).

Regardless of the method or tool chosen, it is important to emphasise that the competitive advantage of an organisation can be quantified with the relative market position of the organisation, with the lowest number indicating highest competitive advantage on the market, which can be easily translated into points ranging on a scale from 0 to 100. This is best represented in Table 5.16:

Table 5.16 Government's Star Rating

Extent of Leadership and Influence (ELI) Index							
EIL	Market leader	Top 10%	Top 11-20%	Top 21-30%	Top 31-40%	Top 41-50%	Other
Star Rating	★★★★★★	★★★★★	★★★★	★★★	★★	★	**nil**

This means that an organisation considered to be in the top 25 per cent in terms of its competitive position, would be awarded three stars using the proposed rating system.

5.3.5.1 Example of the Extent of Influence and Leadership (EIL) In Practice

To further illustrate the relationship between leadership and competitive advantage, the oil and gas industries of Canada are used as an example. According to Paris (2013), the businesses belonging to these industries are the ones that are most affected by new environmental regulations imposed by the state. The industry leaders reacted strongly, specifically objecting to six laws directly related to the operations of the oil and gas industries. These laws were the National Energy Board Act, the Canadian Environmental Assessment Act, the Fisheries Act, the Navigable Waters Protection Act, the Species at Risk Act and the Migratory Birds Convention Act. Several months after the reaction of the industry leaders, the Canadian government published a completely rewritten Canadian Environmental Assessment Act, and made significant changes to the National Energy Board Act and the Fisheries Act. Furthermore, it replaced the Navigable Waters Protection Act with a completely new Navigation Protection Act (Paris, 2013).

The same extent of influence has also been noted in the US. About half of the finalised environmental rules in 2013 were significantly less stringent due to the intervention and influence of the Office of Advocacy, which represented the interests of both large and small businesses and industries. The influence of

business, and particularly of business leaders in the US has also been confirmed by Kamieniecki, a professor of politics and an author of the book Corporate America and Environmental Policy: How Often Does Business Get its Way? He argues that businesses are formidable opponents of environmental groups, and that they usually get involved much sooner in the process of regulation creation, shaping and defining the issues concerned and framing debates to their advantage, which inevitably leads to less stringent regulation (McNulty, 2006).

The influence of opinion leaders is also evident in Australia. According to Denniss and Richardson (2013), who studied the extent of corporate power in the country, there are certain industries which have significant political power in terms of influencing policymakers. One such industry is the mining industry, which has a considerable impact on the environment and thus environmental policy. Of course, the extent of influence is limited to a number of companies, supporting the notion of opinion leaders discussed above, and is dependent on the corruptibility of the government. In relation to this, the example with political donation laws may be also stated. In 2007, the Labor Party came to power in Australia and promised a change in the donation regulation, which raised hopes for limiting the corporate influence on public policy. But, again, due to the significant influence by the business community, the changes were not as stringent as expected or desired (Milne, 2013).

5.3.6 The Environment

Staying consistent with the concept that has been the basis of the study, environment is also an important stakeholder and a crucial element of the input-process-output model. The input, process, output and the performance of this stakeholder as a single chain is illustrated below in Table 5.17.

Table 5.17 The Elements of the Environment Chain

Stakeholder Group	Input	Process	Output	Measurable Performance
Environment	Building design parameters	Design modelling and/or auditing	Certification and external recognition	Long life, loose fit and low energy (3L)

Building design parameters are identified as the input to the model with the environment as a stakeholder. A business organisation usually depicts its concern towards the environment and sustainability by designing facilities for its operations, ideally in such a way that it enables the business to perform exceptionally in terms of conservation and sustainability (Hyde et al., 2007). According to Moultrie (2010), buildings consume resources and energy as well as generate waste on a significantly high level. The construction methods to be utilised by builders need to take into consideration the future patterns of energy and resource use, environmental damage and waste emissions. If a building is designed in a poor way and its design parameter does not reflect sustainability, then it will have adverse social, environmental and economic implications for future generations (Moultrie, 2010). Hence, in order to protect the environment it is highly important for the building design parameters to be set in line with the needs of the future generations and the economic, social and environmental implications on them. This is why building design parameters have been chosen as an input to the stakeholder model.

The process is the design modelling and/or auditing that enables the consideration of environmental issues. A new facility can be modelled during its design to forecast its influence on the natural environment in terms of how its positive effects can be maximised and its negative effects minimised (Grierson, 2009).

5.3.6.1 The Long Life, Loose Fit and Low Energy (3L) Principle, and The Star Rating System

The Long Life, Loose Fit and Low Energy (3L) principle has been chosen as a performance measurement tool in the SSM as it incorporates durability, adaptability and sustainability in the context of the built form. The principle, first advocated by Gordon (1972), measures whether a building meets the criteria of a good architecture across these three domains (Langston, 2014).

The principle fits in well for the purpose of measuring performance of a business in integrating sustainability and environmental issues. Its relevance can be judged by the fact that 3L principle assesses the flexibility of a building to integrate future change and reduce its energy footprint throughout the building's physical life (Murray, 2011). Gordon (1972) created this idea keeping in mind the concept that good architecture should enable the achievement of long-term benefits to the community in which they operate and should be fashionable in terms of legacy and

performance. It is a broader approach to assessing environmental impact than the more common green rating tools widely used in the market.

To develop an understanding about the relationship between the 3L principle and the SSM, it is crucial to analyse 3L and understand the meaning of long life, loose fit and low energy in terms of built facilities. For long life, Gordon (1972) incorporated durability by suggesting that long-term benefits should be pursued and given greater attention rather than short-term benefits. Furthermore, the design of built infrastructure should guard against future obsolescence. According to Pinder and Wilkinson (2000), obsolescence refers to the inability to meet increasing expectations or requirements. This factor is under significant stress because of changing social demand and the attached substantial environmental consequences (Kintrea, 2007). But as Douglas (2006) emphasised, there is a difference between obsolescence and redundancy: the latter means 'surplus to requirements' (Douglas, 2006). Kincaid (2000) and Gardner (1993) identified some factors that might lead to obsolescence, including imposed regulatory and political changes. According to Langston (2011), the long life of a building can be assessed by looking at three criteria: occupational profile (usage), environmental context (location) and structural integrity (design). The score achieved under each category is then converted into star rating using the durability star rating scheme as shown in Table 5.18 (Langston, 2014).

Table 5.18 Durability Star Rating Scheme

Physical life (years)	**Star rating**
250 or above	★★★★★★
249-200	★★★★★
199-150	★★★★
149-100	★★★
99-75	★★
74-50	★
below 50	**Nil**

Loose fit refers to the importance of bringing flexibility within the structures of building so that it can adapt to the unforeseen situations. Loose fit is considered important, as Gordon (1972) believes that a building may lose its relevance for its

original purpose if it fails to respond to changing needs or trends. This may result in demolition or refurbishment, (i.e. premature obsolescence) which may require more future resources. Hence, good architecture is where the design of the building is flexible enough to enable adaptability towards change with adequate structural integrity to promote alternative use. Conejos (2013) created an adaptSTAR model to assess the capacity of building design for future adaptability. The adaptSTAR rating system is implemented when the project is at the design stage. It assesses the extent to which the design concept is able to change for functional use into the future. The rating system takes into consideration functional, economic, political, legal, social and physical considerations (Conejos, 2013).

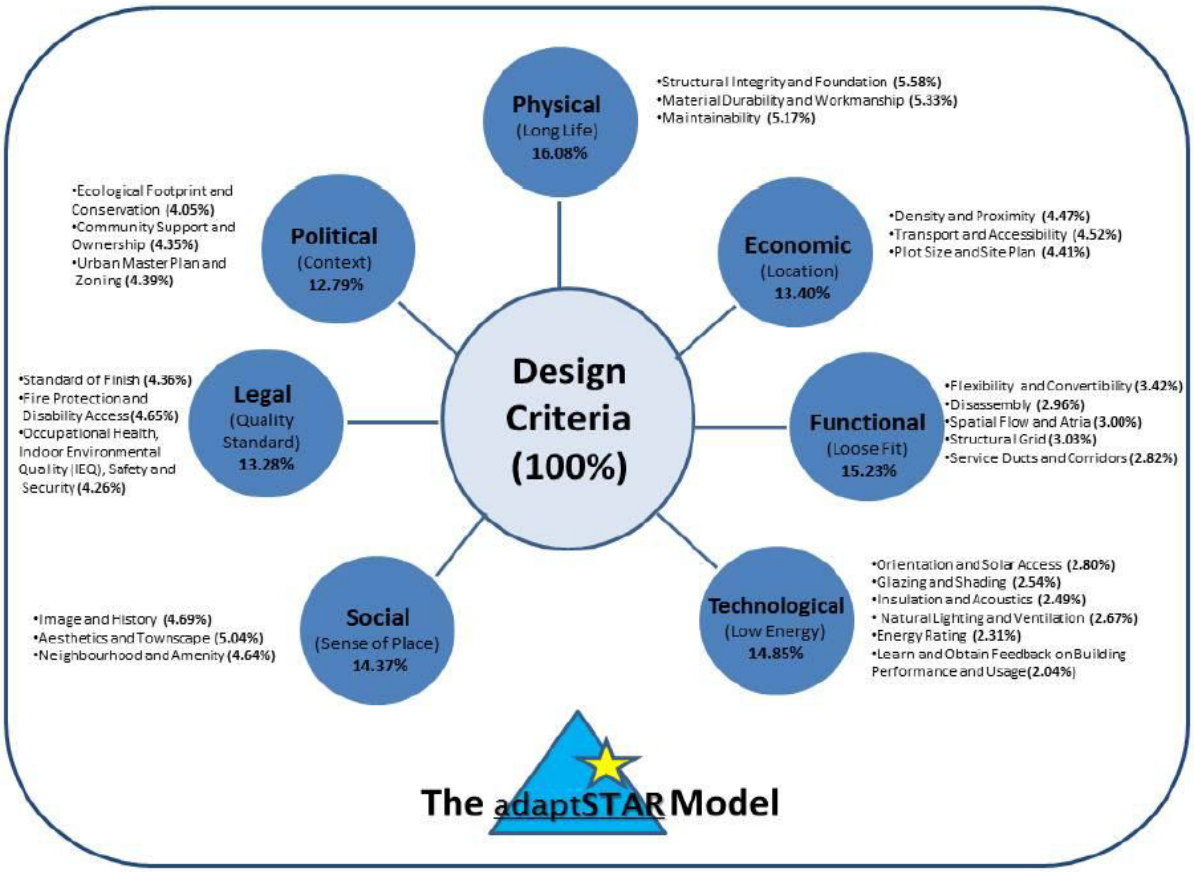

Figure 5.22 The adaptSTAR Model

Source: Conejos (2013)

The results are then converted to a star rating in accordance with the star rating scheme shown in Table 5.19 (Conejos, 2013).

Table 5.19 Adaptability Star Rating Scheme

adaptSTAR score	**Star rating**
85 or above	★★★★★★
75-84	★★★★★
65-74	★★★★
55-64	★★★
45-54	★★
36-44	★
below 35	**Nil**

Lastly, low energy refers to the importance of energy efficiency and the requirement of the building to be designed in a way that promotes conservation of energy and minimises carbon emission into the natural environment (Gordon, 1972). To rate a building for its environmental design in Australia, GBCA has provided the Green Star rating system, which assesses the green attributes of a building by considering eight categories, with extra points awarded for innovation. Credits are rewarded on the basis of these eight categories and innovation. The weightage of each of the eight categories is shown in Table 5.20 (Yudelson, 2010).

Table 5.20 Green Star Weightings

Environmental impact category	**Weight**
Management	10%
Indoor environment quality	20%
Energy	25%
Transport	10%
Water	12%
Materials	14%
Land use and ecology	4%
Emissions	5%

The total of the score in each of the eight categories plus any points for innovation enables identification of the project rating for sustainability. The score is converted

into the sustainability star rating using scheme shown in Table 5.21 (Langston, 2014).

Table 5.21 Sustainability Star Rating Scheme

Green Star score	**Star rating**
75 or above	★★★★★★
60-74	★★★★★
45-59	★★★★
30-44	★★★
20-29	★★
11-19	★
below 10	**Nil**

5.3.6.2 Application of the Model

Based on the findings above, it can be said that to perform well in meeting the needs of the environment as a stakeholder, a building needs to achieve high ratings in all the three areas: long life, loose fit and low energy. It will only meet the criteria of good architecture if the building design promotes durability, adaptability and sustainability.

The 3L Principle is assumed to be inversely proportional to the computed life cycle cost (LCC) per square metre of gross floor area measured over a life of 30-100 years. The model can be applied easily. Each criterion needs to be assessed and the star rating for all three needs to be determined first. Based on the star rating achieved, a combined index will be computed based on equal weighting. A facility that has the minimum impact on the environment will receive high scores for durability, adaptability and sustainability.

It can be concluded that the performance of a building in satisfying the requirements of the environment as a stakeholder can be assessed by applying the 3L principle. A new facility will be said to reflect good architecture if it scores four stars or more using the rating schemes described above, and are more likely to meet the needs of the environment as a stakeholder and produce the desired output in terms of recognition and certification.

5.4 Conclusion

The purpose of this chapter was to provide the foundations for a novel conceptual framework, called the Stakeholder Satisfaction Model (SSM), that can be used to assess stakeholder satisfaction in terms of sustainability with an underlying goal of enabling future improvements in overall business performance. To do this, the need for an objective approach is critical and the application of a standard star rating scheme ensures that all six stakeholder performance measures can be combined.

The SSM related to new initiatives that organisations may wish to implement. Some aspects of the framework may apply generically to any type initiatives while others relate specifically to the procurement of built facilities, which was the focus of the Energex case study. So while the concept of the SSM has universal application, the staff and environment stakeholder groups are meaningful for physical infrastructure only that is designed to have people in a workplace setting. Developing a new product or service, for example, would require a different method of evaluation.

In the next chapter, the need for validation of the model is addressed through the development of a validation process. This is accomplished via testing whether the SSM reflects the needs for which it was created. The use of expert panels has been validation as a successful method for evaluation and providing support in model development in both literature and practice (Moy, 2008; Singh, 2012; Shirazi, 2009; Beecham et al., 2005). Expert panel was chosen as a validation technique because of its ability to assist in making informed decisions when the issue in question is highly contentious or where the best possible results are required. The method is valid and suitable due to its core strengths that include its usefulness for evaluating complex or contentious issues, flexibility in producing synthetic judgement based on quantitative and qualitative data, and its high level of credibility based on the expertise of the panellists involved. However, the use of experts can lead to preconceptions in regard to issues and not allow contribution from other fields related to the problem. For example, as SSM for built infrastructure procurement should be validated by expert from this industry, rather than business entrepreneurs and/or occupants, marketing executives or venture capitalists.

It is unlikely than a completely universal SSM can be constructed and be practical enough to be validated in terms of its rigour and relevance against a wide range of organisational decisions and objectives.

CHAPTER 6:
Expert Validation and Discussion

6.1 Introduction

Following a review of the literature, an in-depth case study of the Energex building and an examination of other sustainability measurement models, this research developed a conceptual framework for the objective measurement of corporate sustainability. The resultant SSM model was designed to effectively enable the evaluation of stakeholder satisfaction based on sustainability. The purpose of this chapter is to validate the SSM using an independent expert panel in a focus group setting.

This chapter is structured as follows. This section introduces the chapter, while Section 6.2 explains in detail the research method used to validate the proposed model. It also justifies the choice of focus group and explains the methodology that has been deployed. Section 6.3 explains the analysis methods of the data collected. A complete discussion of the Input-Process-Output-Performance measure is provided in Section 6.4. This section also reveals the comments and suggestions that were presented by the experts in the focus group session.

Section 6.5 is comprised of six individual subsections, each addressing one specific stakeholder group, and each including a detailed analysis of that group, providing an overview of the expert feedback and their suggestions. Section 6.6 then discusses the TBL concept and analyses the feedback that was discussed during the focus group session, while Section 6.7 explains in detail the star rating system and the proposed outcome of the SSM, followed by the comments and suggestions provided by experts in this area. Section 6.8 focuses on the model improvement

and shows the final phase of the SSM. This chapter concludes with Section 6.9, which summarises the chapter.

6.2 Focus Group Discussion

The focus group discussion method was chosen as a discussion technique of the expert panel in order to validate the proposed model. Focus groups provide an exploratory approach that is extremely useful when innovative gathering of data is required for a topic for where little information is known. They have been used for the exploration of subjects as diverse as AIDS, technology, nutrition and education. It is a particularly useful method to explore knowledge and the experiences of people and can be used for the examination not only of what people think but also how they think and why they think as they do. In other words, focus groups are applicable as a tool for generating ideas, for complementing qualitative and quantitative methods for research, for the triangulation of findings and for the validation of theory, such as may arise from a ground theory methodology conducted in the fields of behavioural and social science (Sagoe, 2012).

The focus group was held at the Energex building in Newstead, Brisbane with a panel of 12 experts from six different categories: architecture (two participants), project management (two participants), corporate real estate (two participants), education/research (three participants), strategic planning (two participants) and corporate client representation (one participant). The participants were free to roam across topics during the focus group discussion; however, the feedback was requested such that it covered four key areas from phase one of the SSM, as related in Table 6.1. The four key areas were:

1. SSM as a complete approach (Input-Process-Output-Performance measure).
2. Stakeholder groups (company, staff, customers, community, government and environment).
3. TBL concept of sustainability (economic, social and environmental dimensions of sustainability).
4. Star rating system.

Table 6.1 SSM (Phase One)

Stakeholder Group	Input	Process	Output	Measurable Performance	Star Rating * (0-6)
Company	Investment costs and projected benefits	Cost–benefit analysis	Discounted cash flow (minimum 30 years)	Payback period (PP)	★★★
Staff	Satisfaction, comfort and productivity data	Post-occupancy evaluation	Happiness, efficiency and empowerment	Workplace ecology index (WEI)	★★★★
Customers	Corporate products and services	Market analysis	Retention, advocacy and purchasing	Customer loyalty index (CLI)	★★★★
Community	Website, publications and other collateral	Community liaison and engagement	Cash and/or in-kind sponsorship	Corporate social responsibility (CSR)	★★
Government	Government policy and regulation	Benchmarking best practice	Competitive advantage	Extent of influence and leadership (EIL)	★★★
Environment	Building design parameters	Design modelling and/or auditing	Certification and external recognition	Long life, loose fit and low energy (3L)	★★★★★★
** A scale linking measurable performance to a star rating is required for each stakeholder group*				**Progress =**	**3.66**
Colour-coding:	Financial	Social	Environmental		

6.3 Content Analysis

The content analysis method was chosen as an analysis technique to examine the data from the focus group discussion. Qualitative content analysis is a procedure intended to classify raw data into groups or themes on the basis of suitable inferences and understanding. Through cautious evaluation and continuous assessment, the themes and categories are produced. This happens because this procedure involves inductive reasoning (Patton, 2002). Hsieh and Shannon (2005, p.1278) define content analysis as "a research method for the subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or patterns." In general, several guidelines that highlight the strengths of this method can be used for determining when and why this method should be used for research. These include the ability to go beyond impressionistic observations of a phenomenon, its unobtrusiveness (which makes the method particularly useful for studying sensitive topics of research), its ability to process the symbolic meaning of the data, its ability to capture qualitative as well as quantitative content, its ability to deal with large data volumes, and its relative inexpensiveness. However, it can take a long time to conduct (Prasad, 2008).

On the basis of the level of participation of inductive reasoning, three methods for qualitative content analysis are mentioned by Hsieh and Shannon (2005):

- Conventional content analysis

  Conventional content analysis is a process involving coding categories being formulated directly and inductively from raw data to describe a phenomenon that based on limited existing theory. Conventional content analysis is best suited for methodologies like grounded theory that begin with observation. Conventional content analysis has been used for the Energex case study data as it also uses the grounded theory method.

- Directed content analysis

  Directed content analysis is a method where preliminary coding begins with a theory or related research outcomes. After this has been done, researchers focus on data and establish key themes during data evaluation. The objective of this method is the justification or expansion of a conceptual structure or theory. Directed content analysis is a great tool to be used when a theory needs to be validated and can help researchers to find supporting or non-supporting evidence for a theoretical framework.

- Summative content analysis

  The first step of summative content analysis is counting of words or manifest content. It involves latent interpretations and themes. Although this initial step appears quantitative initially, it is actually inductive because it subjectively examines the use of words or pointers.

6.3.1 The Process of Qualitative Content Analysis

The procedure of qualitative content analysis begins during the initial levels of data-gathering. According to Miles and Huberman (1994), this early participation in the examination stage assists researchers in switching between data-gathering and concept development. It might also guide the consequent data-gathering process and lead to beneficial sources that may help answer research questions. A collection of distinct and organised methods for processing data is included in qualitative content analysis so that trustworthy and suitable inferences can be maintained. Content analysis can be split into many levels, including the initiation

of organising data and writing up the findings in a report. For the purpose of this research, eight steps have been implemented as follows.

Step 1: Prepare Data

Although it is mandatory to convert data into written form prior to initiating analysis, qualitative content analysis can still be utilised to evaluate different sorts of data. According to Patton (2002), the selection of content should be validated by the researcher's goals, provided that data stems from present texts. Qualitative content analysis is commonly used for examining interviews/discussions transcripts for the purpose of exposing or replicating public information relevant to their ideas and attitude.

According to Schilling (2006), there are questions that appear during the transcription of interviews/discussions; for example, whether comments like sounds, pauses or audible responses during discussion should be transcribed or not; whether verbalisations should be transcribed accurately or merely an abstract would suffice; and, lastly, whether crucial questions from the discussion guide should be transcribed or all queries should be included. On the basis of the research questions, the comments regarding these queries must be given. For this research, the focus group discussions were fully transcribed (see Appendix 3). Once the transcript had been typed into a Word file, it was printed out and checked against the notes taken during the session to make sure everything had been covered.

Step 2: Define the Unit of Analysis

A fundamental portion of text that is categorised during the content analysis is called the unit of analysis. As stated by De Wever et al. (2006), it is necessary that prior to the process of coding the messages are unitised. This should be done before the variations in the unit definition have an impact on the process of weighing results against other resembling research and coding decisions. Hence, one of the crucial and essential decisions of analysis is identifying the coding unit.

Unlike physical linguistic elements that are frequently utilised in quantitative content analysis like paragraphs, sentences or words, qualitative content analysis frequently uses individual themes. The occurrence of a theme can be indicated by the use of a phrase, a sentence, a word or even a whole document. According to Minichiello et al. (1990), the search for the expression of a thought is the main

focus when researchers are utilising theme as the coding unit. Hence, until a text chunk of required length signifies one theme or any related problem regarding the research question(s), it is possible to consign a code to it.

Step 3: Develop Categories and Coding Schemes

Theories, information and available related research together form the three resources used to obtain categories and coding schemes. There are both deductive and inductive ways of creating coding schemes. In the situation where there is a deficiency of supply of theories, data must be used to create categories inductively. As compared to analysis that only explains a specific phenomenon or tests a present theory, inductive content analysis specifically caters to the needs of research made for creating theory.

Bakharia (2014) notes it is recommended that researchers should utilise the constant comparative technique while categories are being formed inductively by utilising raw data. This is because this technique can differentiate between categories distinctly and increase original awareness regarding it. The core of the constant comparative technique is the act of amalgamating categories and their characteristics via the production of interpretative memos and putting every text side by side systematically that has been allocated to a category along with everyone that is presently consigned to the respective category. Using this technique, researchers utilise a primary theory or model that the research is based on and then, through the theory or model, the researcher forms a preliminary list of coding groups.

For this research, the coding of themes was done according to what emerged from phase one of the SSM, in accordance with Table 6.1. For instance, four key themes were identified: SSM as a complete approach, stakeholder groups, the TBL concept of sustainability and the star rating system.

Step 4: Test Coding Scheme on a Sample of Text

When applying a reasonably standardised procedure during the analysis stage, the researcher should develop and also validate the coding scheme initially during the process. Coding a sample of the data is the most suitable test of the consistency and clarity of category definitions. In this research, once the coding of the sample was done, the next step was to check the coding consistency. This step was completed through an evaluation of the inter-coder agreement. Coding rules should

be revised if there is a low level of consistency. The doubts and issues related to the coding rules, definitions of categories or categorisation of particular cases should be reviewed and resolved by the research team (Schilling, 2006). Coding of a sample text, testing coding consistency and making modifications to coding rules is an iterative procedure and should be performed until there is adequate coding consistency.

Step 5: Code All Text

After adequate consistency of the coding themes is achieved, the coding rules are applicable for all of the text. The coding has to be constantly checked during the process of coding, so as to avoid moving towards an idiosyncratic logic of the meaning of the codes (Schilling, 2006). Since coding will continue as new data is being gathered, there is a possibility that new concepts and themes will come up. If this occurs, they will have to be included in the coding system.

Step 6: Assess Coding Consistency

After the overall data set is coded, the consistencies of the coding have to be reviewed again. The purpose of this step to make sure that the coding was done in a reliable and consistent way as human coders can make mistakes, particularly as the coding continues. New codes could also have been added after the last original consistency check. Moreover, with time, there could be changes in the coder's interpretation of the categories and coding rules, which could result in further inconsistency. Therefore, coding consistency should always be rechecked.

Step 7: Draw Conclusions from Coded Data

In this step, the identified themes or categories and their properties are understood. During this stage, the researcher makes the inferences that indicate the reconstruction of meanings obtained from the data and investigates the dimensions and properties, discovers patterns, determines associations between categories and tests categories against the entire sets of data. This step is critical during the analysis process as it is based on the researcher's reasoning abilities.

Step 8: Report Your Methods and Findings

To be able to keep this study replicable, it is necessary to completely and honestly check and report the analytical processes and procedures (Patton, 2002). For qualitative content analysis, researchers have to present their practices and

decisions regarding the coding process. The approaches utilised to develop the reliability of the study also have to be presented.

In qualitative content analysis, themes, patterns, and categories significant for a social reality are identified. This type of analysis does not result in numerical counts and statistical significance and thus it can be difficult to present the research findings obtained through qualitative content analysis. Even though using typical quotations to justify the conclusions is common (Schilling, 2006), when findings of qualitative content analysis are to be presented one should work towards maintaining a balance between interpretation and description. Description provides background information and context to the readers and therefore findings should be appropriately detailed. A qualitative study is interpretive and the explanation of the research indicates the researcher's personal and theoretical interpretation of the concept being studied.

6.3.2 Computer Support for Qualitative Content Analysis

Computer software is commonly used to support the process of content analysis. NVivo 10 was chosen as the qualitative data analysis (QDA) software package for this research in order to yield more professional results. By using this software, the researcher was able to reduce the time spent on manual tasks, allowing more time to be spent on identifying themes and drawing conclusions (Wong, 2008). While analysing the data through NVivo 10, the researcher highlighted the four main nodes and a number of sub nodes in order to improve the accuracy of the analysis process (see Appendix 4). These nodes are listed below.

1. SSM complete approach
    - The model is good
    - Comments and suggestions
        - Sustainability
        - Measurable
2. Stakeholder group
    - Company
        - Measurable
        - Comments and suggestions
    - Staff
        - Measurable
        - Comments and suggestions

- Customers
    - Measurable
    - Comments and suggestions
- Community
    - Measurable
    - Comments and suggestions
- Government
    - Measurable
    - Comments and suggestions
- Environment
    - Measurable
    - Comments and suggestions

3. Triple bottom line
    - Support the idea of TBL
    - Comments and suggestions
4. Star system
    - Support the idea of star system
    - Against the idea of star system
    - Comments and suggestions

6.4 SSM Complete Approach (Input-Process-Output-Performance Measure)

As was mentioned previously, one of the main topic areas that required consideration from the experts was the level of completeness new of the proposed model. It is important to understand that when looking at stakeholder satisfaction and its impact on the sustainability of a business in general, the input, process, output and performance of that stakeholder should be considered as a single chain. The experts were sent a 20-page summary of the proposed model and a full chapter from the thesis was attached as an appendix for those who wanted further detail. The discussion was an open and free forum rather than question–answer discussion.

At the beginning of the discussion, some respondents reported that some points were unclear. Some of the these points were not included in the proposed model chapter but were in other parts of the thesis, so the researcher or/and one of the group were able to supply an explanation to provide the extra detail. For example, one respondent asked: “Can we just reflect a bit on the objective of the project?

Because, when you look at this column under measurable performances, is it ultimately to make sure that the corporation that takes on this matrix or this guideline is going to improve profit as well as their branding? What would be the transition - the outcome, transition for them?" (Academic 3).

In the proposed model (Table 6.1), the column for 'measurable performance' aims to quantify the three pillars of the sustainability: economic, as represented by Payback Period (PP) and Workplace Ecology Index (WEI); social as represented by Customer Loyalty Index (CLI) and Corporate Social Responsibility (CSR); and environmental as represented by Extent of Influence and Leadership (EIL) and Long Life, Loose Fit and Low Energy (3L).

Economic value creation is the primary objective of an organisation when an economic perspective is taken. Stakeholders who have control over the finance-related resources like revenue or funding or who directly influence the cash flow are the ones who focus upon the economic criteria (Haberberg and Rieple, 2008). For the establishment of a business, funding is essential; however, to manage the operations of the business, revenue plays a vital role (ReVelle, 2001). Hence, within the SSM framework, the organisation needs to be included as a stakeholder.

The outputs of an organisation – the product and/or service – are produced after the inputs have been subjected to a production process. Financial resources are essential for these inputs and it is the resources that are also used to carry out production. The performance of an organisation is based on the input, process and outputs and they must be considered as a single chain rather than being analysed individually (Pangarkar, 2011).

In our contemporary world, where the economy is knowledge-intensive, human resources play a crucial role in the development of an organisation (Brown et al., 2013). The economic dimension of the SSM also includes staff as a stakeholder group due to their level of importance. For the sustainability of the organisation, knowledge or productivity information is not enough. There is also a need for comfort and satisfaction to help enhance the productivity of the employees. There should be a combination of all these factors to bring about a positive change in overall attitude and efficiency. Empowerment is another factor which has been observed as vital to the performance of the staff (Dowling et al., 2008).

After this had been explained, another academic respondent agreed and said PP, which is a measure of how much money is the end result of an organisation's decision, and the workplace ecology index are assessing people's satisfaction in various ways. This includes the boss and how staff get on with him/her; the health of the environment that staff are working in; and the tools and the productivity potential that staff are provided to do their job with. From the expert's point of view, those things combined together were a good measure potentially of how the organisation will perform financially.

The second part of the measurable performances column is the social perspective. There are two types of stakeholders that are included in the SSM: the customers and the community. The customer and their role have a level of importance, since they are the actual receivers of the value that has been created. They are part of a social network and affect the product and service creation significantly (Marr, 2009). Market analysis can make use of this information, for instance, retention and increased purchase of the commodity by the customer would only occur if they are involved in the newly created service or product (Kumar and Shah, 2015). The customer performance of an organisation is measured through this objective and is a credible source (Wilburn, 2007).

The lifecycle of an organisation is very much dependent upon the community, which includes the external stakeholders as a wide set. These stakeholders play a supportive role in the entire process, specifically in the case of controlling resources as part of the social capital (Wells, 2013). There must be an input variety present that would help and support social networking, like the website of the organisation, public engagement events or publications. Corporate social responsibility is a concept that is applied within organisations and its outcomes can be significant. Hence, community engagement like in-kind or cash sponsorship leads to an increased level of corporate social responsibility and can be used as an objective and credible measure of performance.

Generally, the experts supported the measurable tools that were proposed for the social aspect. They explained that loyalty and corporate social responsibility are very much social things that give back to the organisation. As a whole, the things they do – the buildings they build, the service they provide, the image they have – determine if customers are loyal to the company. When loyalty exists, it might

eventually find its way into the financial side as well, but it primarily measures the human component and corporate social responsibility.

The third perspective used in the construction of the measurable performance column is environmental. This includes two stakeholder groups: the government and the environment. The inputs included are the regulations and legal policies that are set by the government, which is why the role of the government is considered vital. They are responsible for setting the legal standards of the organisation and it is essential to control these standards in terms of resources (Carroll and Buchholtz, 2014). This control is carried out through various methods, like the benchmarking process that allows for information decisions to take place for the enhancement of competitive advantage. Also, leadership and influence may be used to assess the position of the organisation within the marketplace.

The degradation of ecological resources is an issue that requires consideration. Organisations should create value in order to manage the environment and prevent this degradation. Recently, green business activities have increased importance for companies that wish to attain a strong competitive advantage in the market (Esty and Winston, 2009). Good environmental performance can be measured through a green certification accomplishment. This is specifically for the construction industry, as the designs for construction require inputs that are sustainable. For example, they must keep in mind that the material being used reaches a standard to attain/maintain the certification (Kibert, 2012). In response to the green certification available for the construction industry, one academic respondent said: "The final two I was interested in as well, because government's– one of their mandates is to show leadership and I guess that can be evidenced through what companies like Energex and Qantas do in the world and how others can learn from their experience and how we can all get better. And the final one of long life loose fit low energy … that's a lot more than Green Star measures, because that really just measures – it's more focused on energy, really, but it's about resources".

In the discussion, about two-thirds of the respondents showed support and agreement with the idea of having these validated measurements tools for the objective measurement of corporate sustainability.

One aspect of the model that several of the respondents queried was the term and/or concept "sustainability". One respondent, who was a corporate real estate

professional, asked: “You talk about sustainability – are we talking about the organisation or the influence of their built environment on their sustainability? Is it the organisation’s sustainability period or about the building’s effect on the organisation’s sustainability?” The researcher responded, “It’s more about the organisation.” One of the academic respondents supported the researcher and respondent’s view, and said “I read it as that, yes” (Academic 1). However, another academic respondent disagreed and presented an alternative view. He argued that sustainability is about buildings, green sustainable buildings that can help these other issues. So if organisations want to attract bright, smart, thinking, innovative people who are going to drive your organisation to that profit level that you’re looking for, this is what you need. “So when we see Energex, we think, Oh, they do this, they do that, as opposed to the other guy, who may be a bit dodgy, more reliant on whatever it is, or whatever the value set we may be attaching to that particular relationship, consumer relationship. So, there are two sides in terms of not just the consumer but also attracting the workers and he thinks this is why this is going to be very important, because it moves just beyond this thing we’ve been working on and trying to just get buildings that are green - we’re trying to get a work environment that’s very positive and progressive and so forth.”

According to the feedback from the respondents, especially those from sustainability and project evaluation backgrounds, in order to have a successful and sustainable organisation, it is very important to have a workplace with a high standard of work environment, as the work environment affects both the external and internal stakeholders. In other words, the building has an extensive impact on the inputs, processes and organisational sustainability outcomes because it has a positive relationship with the other pillars of sustainability. However, as mentioned before, the SSM was built based on a case study of the Energex building as a high performance green building. Therefore, the experts concluded that if we measure an organisation with built environment initiatives, the proposed stakeholder groups would work perfectly but in the case of non-built environment initiatives, the assessment strategy of SSM would need to be modified. Two groups, namely staff and environment, would need to be modified. The remaining four of the proposed stakeholder groups can be considered as generic and applicable to any organisations.

The majority of respondents supported the idea of having one system to measure sustainability, after considering all of the details of each stakeholder. For example,

Academic 3 stated that: “It looks good, I think this is going to be very interesting to see how it could be furthered within the industry, so it will be exciting to see where it goes.” A senior estimator respondent said, “I can see how this model as well could relate to other organisations. It’s possibly something that I could put forward to the company that I work for, which is [XXX] [2]. We’re doing a shopping centre development.”

6.4.1 SSM Complete Approach Comments and Suggestions

As discussed earlier, most of the respondents were happy with the proposed model. However, the purpose of this focus group is to provide validation of the model and as a result of the discussions of the complete approach, two important suggestions were identified: the implementation time and the period assessment. These suggestions are discussed in detail in the following section.

6.4.1.1 Implementation Time and the Periodic Assessment

A group director respondent suggested that the SSM should also consider the implementation time of the organisation’s assessment or evaluation, especially for the new projects or projects located in a new area with little existing infrastructure and services. For example, if the SSM is applied to a new completed project directly after handover while the employees are still adjusting to the new building and their new environment, the answer to the surveys on which the SSM is based will not be the same if the model is applied after specific period of time when the infrastructure is more developed and the employees are accustomed to their new environs. This would affect the outcome of the SSM assessment. One respondent from the corporate real estate group used Energex as an example. Energex moved their staff into a drastically different workplace in an area without much development. Since then, the infrastructure in the precinct has developed and the staff have become used to the Energex building. “If we look at the precinct, Energex were the founding body that came here. If we were to ask that question in maybe another five years’ time when the infrastructure and everything else has caught up, it might not be an issue. So again, you’ve got to wait for the rest of the world to catch you up before people go, Oh actually, it’s really easy to get to work.”

One way to consider that issue would be to conduct the post-occupancy evaluation via three different time horizons (Oladiran, 2013). A time frame that could be added to the SSM may therefore comprise:

[2] Business name was retracted to protect the anonymity of the participants

1. An operational review three to six months after handover
2. A performance review 12 to 18 months after handover
3. A strategic review three to five years after handover

1. Operational review

After the project has been handed over, the building should be evaluated immediately. This is because the events are fresh within the minds of the occupants. However, it is also essential to allow the 'dust to settle' and leave a little time after the handover takes place. The performance review may be better to be conducted later and included within the wider review.

2. Performance review

A period of at least one year should be maintained between the occupation and conduct of the post occupancy evaluation. After a year, one full seasonal cycle has been completed and the vital information regarding the performance of the building and its system under various conditions can be extracted. The managers or users of the building are also given time to realise if there are any chronic problems present with the building.

3. Strategic review

For longer time reviews, POE is considered an essential technique. At this assessment level, the review should be done three to five years after the occupation to understand how the building has been able meet the original objectives and needs.

Another important point was mentioned by the respondents, especially those who have had involvement with the Energex project. They asked how assessments/evaluations that happen on an ongoing basis would affect the results of the SSM evaluation. According to the corporate real estate respondent, the assessment should be on a subsequent ongoing basis. He explained that the interesting thing they felt about the Energex project was they got to meet a lot of people who worked for Energex along the way and some of them said "Who the hell invented that stupid thing? And then you'd meet them nine months later and they'd be going, "Oh, that's fantastic, that ruddy thing. Now I get it."

The importance of the periodic assessment was again discussed by the experts but from a different point of view. They talked about staff turnover, referring to the older employees who leave the organisation and are replaced by new employees. They asked, “Does the building actually work better now because all the dinosaurs are retiring and, the young kids are coming in and they use it in a completely different way or, does the building have the ability to move with the business, and what is the perfect sort of footprint that lends itself to changing business needs?” (Real estate 1).

Another respondent who is a group manager also supported the idea of having periodic assessments and agreed with the points suggest by the previous respondent. He explained that the first few studies potentially are not going to be great. He said, “You are actually asking someone to change the way they may have worked for 20 odd years, in Energex’s case, so how long does that take for the relearning of things and then getting the benefit and then what are the learnings out of that?”

The respondents from all groups agreed about the importance of the implementation timeframes and periodic assessment and the ways these could affect the result of the stakeholder satisfaction model evaluation have to be identified. Therefore, these two points will be considered and are part of the model improvements at the end of this chapter (see Section 6.8).

6.4.1.2 Model Outcome

The second important point that was raised during the discussion was the outcome of the proposed model. As explained in the previous chapter, the intersection of the three main pillars of sustainability (financial, social and environmental) leads to a new element represented by progress, which is the expansion of TBL into a quadruple bottom line assessment of the organisation that is part of the result of the SSM framework, as shown in Figure 6.1.

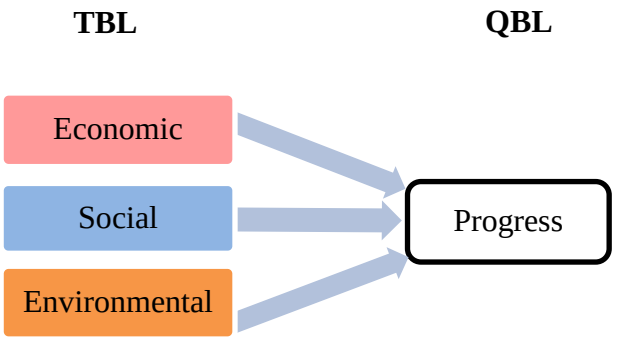

Figure 6.1 The Quadruple Bottom Line

Source: Author (2015)

The majority of the respondents supported the idea of having progress as the outcome of the SSM. However, they suggested that the outcome of the model should identify the strengths and weakness of the organisation, not just provide a progress number or a numbers of stars. As they explained, "the really interesting question is, after all of that investment, how do you know what bits pay off? Could we come out with a number, a star, a something, that says – that sort of supports that we did the right thing. But, more importantly, we got some learnings out of that as well. Maybe we didn't need to get six stars, maybe we could have done five, but tweaked up something else. Maybe we should have put more effort into the communication after than before or maybe they would be the fantastic lessons." (Real estate 1).

Another academic respondent talked about the same idea but from a different point of view. They thought that a number was still needed to show the measurement of the organisation. In other words, if we accept the idea of the proposed model with the financial performance represented by company and staff, the social side presented by community and customers and with the government and environment representing the environmental side of the organisation, the result of measuring these elements provides a much wider view than a Green Star rating would ever give, as it is actually more about how those three groups interact with each other. From his point of view, it is like a balancing act. If we have got the three circles, overlapping, then if one of those three circles is not so good, one can move stuff

from another circle to make it better. For example, could reduce our financial performance, we could take longer to get our money back, but we can use that money to invest into the environment or into the social community to bring it up to a more balanced level. So maybe there's some advantage? He explained that the number is just a point in time but one could track that number over time.

The expert explained that the main goal of the SSM is not only to demonstrate the close relationship between the three pillars, indicating why it is necessary to take all of them into account, but also to enable the provision of an effective focus in terms of what problem it is attempting to solve. Another participant from the architecture group agreed with that and attempted to summarise the aspect of understanding the balance by reporting that the benefit of this to him is understanding the balance. This might be achieved by a radar diagram. It's not whether something is fantastic and we can leave it alone. It's just, if we have got a 'sphere', we are heading in the right direction. If we have got a really 'pointy rock', we know we have work to do. It's just an intuitive thing that everybody will get.

Use of graphical means to better describe the outcomes of the SSM are to be taken forward to the improvement phase.

6.5 Stakeholder Groups

Stakeholder groups were the largest section discussed on the focus group as it includes six parts: company, staff, customers, community, government and environment. The experts shared different opinions in terms of stakeholder roles, categories and performance measurement. A few respondents were slightly confused about the concept of stakeholders and how it related to the sustainability of the organisation and where the border of each stakeholder group ends. They noted that the stakeholder concept is very broad in terms of who might be a stakeholder, because what the model examines is largely the perception of the stakeholders.

Measuring sustainability is important since it has a relationship with the stakeholders; however, the measurement process is not easy. After conducting the research case study analysis in Chapter 4 and a review of the literature about stakeholder theory, it was observed that it is possible to measure sustainability through measuring the stakeholders' satisfaction of the organisation (Szekely and Dossa, 2014). Stakeholders have been defined in various ways in the literature and

there is no universally acceptable or common approach. Many scholars define a stakeholder as a group or individual who has the ability to affect the organisation's objectives and are affected by these goals and their level of achievement (Gossy, 2008). For the purpose of this research, this definition has been considered appropriate. Within the assessment, it is also required that the multiple assessment criteria, the disagreement between the stakeholders and evaluation of the same impact at various levels must be included (Delai and Takahashi, 2011).

Various authors have stated that an organisation can achieve its objectives by engaging the stakeholders within the sustainability development process (Carroll and Buchholtz, 2014; Blackburn, 2007; Eweje and Perry, 2011). Stakeholders can bring vast benefits to an organisation, which is why they are considered to play a vital role. Their efforts include the level of transparency, the sustainability effort and its perspective variety, organisational and community support for these efforts, future sustainability efforts, expansion of present capacity, greater involvement empowerment, increases in sustainability awareness, sustainability effort coordination improvement and broad policy change advancements (Werther and Chandler, 2010). Through these principles, a strong foundation is maintained and the relationship between the stakeholders and the organisation can be strengthened.

6.5.1 Company

As mentioned earlier, the majority of the experts were happy with the idea of the SSM and how the IPO approach worked. However, the measurement dimension was a hot topic of discussion for most of the stakeholder groups; in particular, for the company. From the point of view of efficiency, one of the most adequate and accurate models for performance measurement is the PP. The payback period is defined as the number of years that is expected to be required for the recovery of the whole original investment. As a tool, the PP has proven to be very useful as it enables relatively simple decision-making. Indeed, the general notion of this tool states that if the PP is smaller than the number of years specified, then the project or investment should be accepted or carried out (Ehrhardt and Brigham, 2013).

In relation to the SSM, one academic respondent supported using the PP tool for financial measurement and suggested that identifying how long it takes to get the money back is tangible and financial. However, a few experts wondered if the PP was something that would work for the tenants or if it was more suited for use by

the owners/landlords. One corporate real estate respondent mentioned that this could be an issue as many commercial and government organisations prefer leasing to owning space. A corporate client representation respondent who is the property manager for leased buildings explained that tenants/organisations who leased buildings were still able to use the PP tool, as they still do a business case which compares a cash flow with another cash flow. As corporate manager 1 described: "So, they have got a rent stream that they have to pay if they stay somewhere else versus the rented building and the benefits that come with this building are lower outgoings and everything so we do still do a business case."

In summary, PP is not only valuable by itself but it has also been proven to be very useful for measuring efficiency, which is essential for sustainability, especially in the design of buildings (Bodart and Evrard, 2011). Due to this, the use of PP in the SSM not only provides accurate results, it also supports the validation of the new framework in general.

6.5.2 Staff

The strength of this study is reflected in the establishment of the importance of POE through the new proposed framework for the design and management of workplaces. The study highlights the relationship between known and proven techniques for environmental auditing, POE and business performance, which places the focus on the mutual interdependence of these elements and sets the foundations for the creation of a successful strategy for continuous improvement. In this way, the findings of the study can assist not only in achieving a better understanding of workplace ecosystems: they can also offer opportunities for considerable business improvement through the routine adoption and use of the proposed workplace ecology (Alkhawaja, 2015). According to an academic respondent, evaluating the workplace involves assessing people's satisfaction in various ways, it includes the climate and the health of the environment that people are working in and the tools and the productivity potential that staff are provided to do their job. The respondent stated that a combination of these factors potentially provides a good measure of how the organisation will perform financially.

About one-third of the respondents from all the category groups agreed that WEI is a great tool to measure staff satisfaction that will also help to show the financial situation of the organisation. They pointed out that if the organisation is making money but their staff are all upset, it does not make sense – rather, staff

satisfaction and making money go together. As they noted, if the organisation gets a high return on their investment, it is because the workforce is on their side and contributing.

Three main determinants set the basis for the WEI model as it is used in the framework developed in this research. Workplace ecology describes the conditions of a workplace that contribute to the empowerment, efficiency and happiness of its occupants. This study enables the quantification of workplace ecology for all employees in an organisation, taking into consideration the various typologies, contexts and standards. A number of demographic parameters are used in the framework to explore and assess the relationships of the model's determinants on an individual level. The combination of these determinants enables the calculation of a workplace ecology indicator, which represents an average value for all the workplace occupants and enables the identification of possible improvement areas. If the workplace ecology indicator is low, it means there is a low value of comfort and, since comfort and productivity are positively related (Alkhawaja, 2015), then an investment in comfort would undoubtedly lead to an improvement in productivity. The WEI framework also enables a greater insight and understanding of the actual influence of each separate dimension and how they are influenced by factors such as job complexity.

However, another group of experts had different opinions about the best way to measure staff satisfaction, arguing that the building is important for the staff but it is not something to prioritise to show their satisfaction. One of the corporate managers provided the opinion based on personal experience, "that staff happiness is influenced by a lot of things and probably one of the last things that influence them is the building." They felt that it is important but it is not in the top two or three factors. On the other hand, other experts in the group believed that the building has a significant impact on the satisfaction of the employee and they stated that staff satisfaction is closely associated with the workplace and environment. They thought staff working in an environment require the organisation to meet their standards of health, wellbeing and safety. Although there are several factors that may contribute to the satisfaction of employees, the four main ones are self-personality, self-values, the working environment and the social circle. The most important among these four in terms of sustainability is the working environment. However, this covers all aspects of the working environment like job type, the challenges at work and the scope of new and creative ideas

(Gomes, 2009). A strategic planner in the group stated that in their experience the building does affect people and he provided an example of Qantas airlines to justify his opinion. He explained that during recent years, Qantas were going through a terrible time, renovations to the building created an environment in which management were able to communicate well with staff and create a positive working environment. The benefits of the building were able to allay a lot of the problems with the company's poor financial performance. Hence, corporations do consider building and workspace as an important factor.

As evident in the discussion reported here, the experts have different opinions about the elements that should be in the staff chain to measure staff satisfaction. The majority of the experts agreed that it is important to measure the empowerment, efficiency and happiness of the staff, which is supported by the large amount of research done on work environments that demonstrate that it is important for the staff to feel good about their working space. Staff, space and technology are the three largest centres for organisations However, about two-thirds of the expert respondents suggested that to measure the staff satisfaction, the researcher should consider the organisation's culture and staff engagement and these elements should be somewhere in the staff chain in the proposed model. An architect stated that POE is a valid tool for the validation of that process at the end but it certainly does not measure staff engagement. "There's an opportunity there to engage people at the beginning of the process that a reliance on inputs from post-occupancy evaluation have delayed that input too long".

Satisfaction is important in every aspect of life, including all activities in which humans are involved. At an organisational level, satisfaction is necessary to successfully continue business activities (Isa et al., 2011). Urban and Mazurek (2011) stated that satisfaction occurs in humans when individuals feel happy and contented with their surroundings. Many studies show that involving people in any of the organisation's processes can create a positive attitude in them and thus produce motivation, satisfaction and commitment (Wright et al., 2005; Hampel and Martinsons, 2009). A real estate agent respondent said that "one of the things that most influenced in Energex was that right from the start they took every single member of their staff on a journey and they set up a team and they engaged the team from pretty much from day one right through until people were sitting at their desk". Through engaging the staff in the building's development, Energex were able to increase satisfaction.

The interaction and involvement of the managers is extremely important for improving satisfaction. They include operational managers, project managers and other staff who work on the directions given by upper management. Therefore, the organisation should appreciate and value these people. This helps the organisation to strengthen the relationships with its key stakeholders that are vital for the organisation's success (Vuksic, 2011). As noted by an architectural expert, people will leave an organisation if they do not feel valued and are not getting along with their boss, and people will also leave an organisation if they are not feeling comfortable in the space.

To summarise, it can be said that it is very important to understand that employees are an integral part of any organisation and the workplace has a significant influence on labour productivity, which directly affects the financial and overall business performance of the organisation. The study emphasised the relationship between POE and business performance that underpin a successful strategy for continuous improvement. Some of the experts agreed that WEI is a great tool to measure staff satisfaction and that staff satisfaction is closely linked to the environment and workplace. However, slightly more than half of the respondents had different opinions about the best way to determine staff satisfaction and stated the building and work environments might contribute to some extent but to measure staff satisfaction the process of the staff chain needs something more than POE. They suggested staff engagement is an important factor that should be part of the staff process in order to measure staff satisfaction. POE should be considered as its very widest sense.

6.5.3 Customers

It has been shown that green buildings have considerable sustainability benefits in terms of providing measurable financial value, including increased asset value and rental rates, reduced depreciation risks and higher attraction and retention rates of tenants (O'Mara and Bates, 2012). Furthermore, green buildings take into account environmental performance, therefore providing for the increased safety, health and productivity of the occupants of the building. This means that green buildings make a strong case for the triple bottom benefits, in the terms of profit, people and planet (O'Mara and Bates, 2012). However, the experts agreed that while consumer satisfaction may be important for customer retention due to its potential to affect the decision of the consumer to continue the relationship with the company, product or service, it cannot be used for providing accurate information to predict

consumer behaviour in the future. To do this, customer loyalty should be looked at (Van Vuuren et al., 2013), where customer loyalty is defined as a deep commitment of the customer to re-patronise or re-buy a service or a product in the future, regardless of the marketing efforts and situational influences that have a potential to switch the behaviour of the consumer (Kincaid, 2003).

However, while the role of loyalty on the defining and changing of customer behaviour is relatively clear, what remains as one of the greatest challenges for organisations is the interpretation of the signals sent by the customers and their insufficient engagement in the organisation's sustainability efforts. In other words, the organisation's performance, especially in governance, environmental and social areas, is not informing the purchasing decisions and thus is not influencing general customer behaviour to the desired extent (Accenture, 2014). This is the reason why it is necessary for organisations to undertake comprehensive market analysis, as its main purpose is the collection of information that will provide market insights to businesses to enable them to build an effective operations strategy (Xu, 2005).

The majority of the respondents agreed with the previously stated argument provides the grounds for including market analysis as a process in the framework developed in this research, and there were similar confirmations from the majority of the respondents that it is also important to emphasise that there is a strong positive relationship between market analysis and sustainability on one hand, and between market analysis and customer loyalty on the other. The experts mentioned that it is important to emphasise that the three sustainability dimensions of the triple bottom line represent the basis for market-oriented capabilities, resources and competitive advantage, which highlight the role of market analysis in the creation of sustainability and overall business strategy. In relation to the latter, it should be understood that customer loyalty is the result of a successful market strategy and is the product of market analysis and evaluation of the marketplace experiences (Li and Green, 2011).

This research uses the customer loyalty index (CLI) as an approach to measure customer satisfaction based on the TBL. The respondents commented that by quantifying customer loyalty, the SSM framework provides the means for measuring organisational success through societal impact and ensuring the improvement of its social performance. They said that when customers are loyal to

the organisation and organisation is loyal to the community, it is like an exchange of social capital. The CLI proposed in the SSM has already been proven viable through the averaging of the three loyalty factors: advocacy, retention and purchasing (Hayes, 2008). However, the SSM framework offers an innovative perspective in terms of social performance by relating these three factors to the influence of customers on the organisation's products and services and their assessment through market analysis, in which the necessity of regarding the input, process, output and performance measurement as a single chain is achieved.

To summarise, almost all of the experts were happy with and supported the proposed measurable performance as well as the chain of the customer group. As one academic expert said, if one is loyal, it might eventually find its way into the financial side as well, but this is trying to measure the people component and corporate social responsibility is like the opposite of loyalty.

6.5.4 Community

As mentioned in Chapter 5, the SSM enables the calculation of an average value of the organisational CSR based on the level of presence and inclusion by addressing things like the website and publications through the process of community engagement. For example, if the CSR value is low because of the low extent of information presented in the public domain, this value can be increased through improving the published data, which will lead to increased community engagement and thus an increase or an improvement in organisational CSR.

However, the experts argued that only looking at certain types of information like corporate websites and publications was essentially considering only one-way communication: from the organisation to the public. If news feeds or similar data were included, it would be possible to keep a check on the feedback obtained from the community at a low cost. Through the use of news feeds or social media, there is the opportunity to actually enhance two-way communication at the level of community input.

The majority of respondents, especially those from the project manager group, agreed with this view. Project Manager 1 described their real-life case experience with a similar situation. He explained that using social media tools and other related technologies, they were able to carry out a relatively extensive program for Virgin Airlines. In this program, they found that monitoring Twitter feeds offered

them a great deal of information. In fact, they were receiving more rapid information regarding the happenings of their company in the airport lines by monitoring Twitter that they were from the internal communication channels of their company, even though they had a huge range of active internal hotlines and people present on conference lines. There are several progressive analytical tools that are available for analysing social media. These tools would enable organisations to comprehend the feelings prevalent amongst the community with respect to certain issues, keywords or subjects. Hence, the tools at one's disposal are significantly advanced.

Virgin Airlines had a team comprised of around 20 people at that time using these tools. As the respondent pointed out, when you visit the Facebook page of the large-scale companies, you will see feedback from customers followed by messages from the corporate team like, "Oh that is an awful story." They are seen sympathising with the individual and requesting the individual go offline to communicate with the corporate team member in order to resolve the issue. There are two objectives of this strategy: the company truly wishes to fulfil the needs of the stakeholder, but at the same time they wish to quickly remove the negative comments from the public feed so as to present a good perception of their business.

Respondents asked why the process of community liaison and engagement has been incorporated into the framework in this research. The researcher explained that community engagement is not confined to a single policy or a project: it is a way of communication, governance and decision-making that empowers the members of a community to own the change they wish to see happen, which leads to equitable outcomes. It encompasses a comprehensive approach that creates practices and institutionalised mechanisms that enable the sharing of power and control in the decision-making system with the ultimate purpose of problem-solving (Bergstrom et al., 2011).

In general the respondents from all groups were satisfied with the community chain proposed in the SSM. However, experts suggested some additions to the input component that will help the process of data and its measurement in order to get an accurate view of community satisfaction. This suggestion will be considered at the model refinement section.

6.5.5 Government

Moving towards sustainability does not just represent the simple pursuit of a cause that is worthy, nor is it an attempt to appease the anxiety or concern of one stakeholder. Instead, it is an acknowledgment that those organisations which are capable of using human capital and natural resources in a responsible and efficient manner have the greatest likelihood of being chosen as a destination for investment and talent, which highlights the issue of sustainability leadership. In this context, reporting benchmarks such as the Global Reporting Initiative standard, which is the most commonly used benchmark in Australia, emerge as the main tool for those organisations that seek to achieve sustainability leadership. However, one significant problem that emerges from this is the lack of focus and guidance on how and where to invest in order to achieve sustainability and integrate it with the overall organisational strategy (Brandlogic, 2012). A few respondents mentioned that the government should not be a stakeholder but it should be something more comprehensive. For example, an academic respondent stated he believes that the government is the fourth tier dimension of sustainability along with the financial/economic, social and environmental and it should not be included as part of environment. However, governance more broadly plays a role in all dimensions.

A large number of the respondents shared different opinions about the government as a stakeholder. They suggested that the outputs for government should be carefully reframed and assessed in terms of a company's support for or attainment of openly stated public policy goals. The concept of competitive advantage, which innocently links the operational effectiveness of a private organisation and the efficient realisation of its sectional interests with its direct political influence, has an obvious political risk in perceptions of corrupt influence. They stated that the output for government could include some kind of policy validation step, as to equate it with competitive advantage misses things like equity, responsibility and an obligation to protect the environment.

What is also important to emphasise here is that benchmarking best practices is primarily a tool for improvement that is achieved via comparison with organisations recognised as industry leaders. It provides a wider focus for the organisation and forces it to become more competitive by raising the overall competition standards of an industry. Benchmarking is usually a complex and lengthy process, but it can have numerous benefits, which in the case of the building industry include a better understanding of the operation of building portfolios, an allowance for building

comparisons, an identification of areas for improvement and assistance in the preparation for new legislation (Bosteels et al., 2010).

This research uses extent of influence and leadership (EIL) as the basis of a new framework for organisational sustainability assessment. By doing this, the framework developed in this research provides the means for the quantification of competitive advantage through which the measurement of the organisation's success is enabled via its competitive position. This takes into account the economic, social and environmental performance of the organisation as a whole.

In summary, approximately half of the respondents supported the proposed government chain as well as the measurable tool. However, some changes were suggested. In the case of the government as a stakeholder, taking into account the input, process, output and performance measure as a single chain offers an innovative approach to the understanding and assessment of corporate influence and leadership through placing an emphasis on the strong relationship between the government's issues, policies and regulations, the benchmarking of best practices and the achieved competitive position. This is enabled through the quantification of the extent of influence and leadership.

6.5.6 Environment

In the last few years, the Australian green building industry has experienced significant growth, evolving from a niche sector that was focused on single dwellings to a strong, established industry that encompasses projects of any scale, including communities and whole cities. While this growth has been driven mostly by increases in national environmental concern and public demand, the evolution of the industry has also been led by the national guidelines for building sustainable structures that have been introduced and supported by the GBCA. The GBCA is responsible for setting one of the two national environmental green building auditing and certification systems (the Green Star rating system), and it also provides guidelines for green building modelling (AGATC, 2015).

Given the significant impact of the building sector on the environment at both the global and national level, the design modelling of green buildings is of particular importance as it is not only the operations and maintenance of buildings that have a significant influence but also their design and construction. This is especially important due to the fact that the building design influences the performance of

building services that are one of the major contributors to environmentally and sustainability related factors such as energy usage and cost (Toth et al., 2009).

In relation to this, the case for incorporating the process of design modelling and/or auditing in the new framework proposed in this study is easy to understand. The main reason for this lies in the variety of sustainable requirements that buildings need to achieve in order to be truly sustainable, as the implementation of these requirements represents a significant challenge for building designers and construction professionals. In order for these challenges to be overcome, it is necessary that all stakeholders are involved in the building modelling and design and that all factors for sustainable development are considered. However, this can only be achieved if the principles and issues of sustainable development are addressed from the early stages of building design modelling (Iwaro and Mwasha, 2013).

This is further supported by Andrade and Braganca (2011), who point out that a number of authors agree that the design stage is the most crucial for a new building's sustainable performance. This crucial role of building design has also been recognised from a practical perspective. For example, the Australian Institute of Architects (AIA) has identified a number of sustainable strategies that should be incorporated into a building's design and are related to all stages of the design modelling including the pre-design, the site selection, the conceptual design, the selection of materials and the use of resources (RAIA, 2001).

But, even though good building design can lead to the achievement of significant environmental improvements, such as the reduction of energy bills by 25 per cent, the capital costs involved may be considerable, which raises the question of the economic cost-effectiveness of sustainability efforts. This is why it is important to consider not only the design but also the operation and maintenance of the buildings through the assessment of the building’s life cycle as a whole (ITU, 2012). This highlights the need for and the role of auditing as a process and creates an opportunity for tackling the economic and social dimensions of sustainability in addition to the environmental one.

This research makes the case for the use of the 3L model (long life, loose fit and low energy) to assess an organisation's environmental performance due to its acknowledged worth as the foundation of "good architecture" design which

combines the function, structure and beauty of a building with the principles of durability, adaptability and sustainability (Langston, 2014). However, it is the relationship of the 3L model to the building design modelling and/or auditing that is unique in the approach presented in this study, as this relationship enables the use of the 3L model in a manner in which the principles of durability, adaptability and sustainability are treated as equally important as they represent the basis of true sustainable development (Langston, 2014).

Generally, the expert panel were satisfied with this section and agreed to the environment chain and the 3L measurable performance tool. One academic respondent supported using the 3L tool as an environmental measurement, saying that long life loose fit and low energy are well known to the architects in the room "and that's a lot more than Green Star measures because that really just measures i.e. it's more focused on energy, really, but it's about resources." However, as the case study of this research was a green building facility, the proposed tool would work perfectly as designed; however, if the SSM is to be applied to other kind of facilities, this would require a different method of evaluation.

Stakeholder Groups Comments and Suggestions

A small number of respondents queried where the broader supply chain fits as part of the identified stakeholder groups and whether these stakeholder groups are suitable for all kinds of organisations. Regarding the boundary of each stakeholder group, an estimator respondent suggested that it would be a good idea to have subsections within each group to determine the border of each stakeholder group. However, the majority of the respondents indicated that the SSM relates to new initiatives that organisations may wish to implement. Some aspects of the framework may apply generically to any type of initiative, while others relate specifically to the procurement of built facilities, which was the focus of the Energex case study. So while the concept of the SSM has universal application, the staff and environment stakeholder groups are meaningful for physical infrastructure that is designed to have people in a workplace setting only. Developing a new product or service, for example, would require a different method of evaluation.

6.6 Triple Bottom Line (TBL)

The concept of TBL has gained popularity and significance over recent years as a sustainability-related model. The TBL framework, developed by Elkington (1997), takes into consideration three dimensions of corporate performance: financial, social and environmental. The three elements of the TBL are also known as three Ps: profits, people and planet (Slaper and Hall, 2011). TBL is one of the four main parts of the SSM model and it was one of the areas that the expert panel were requested to provide feedback on during the focus group discussed. The majority of the respondents from all expert groups were supportive of the idea of having the TBL as the backbone of SSM. A senior estimator respondent stated that the TBL system of measurement is a really good approach that enables the combination of financial, social and environmental aspects to create a total system of measuring sustainability.

Experts agreed that applying the TBL concept in the model established in this study is not only important for the success of the framework, it also plays a role in the overall organisational strategy and hence affects its overall performance. Many of the respondents explained that TBL is very important for two key reasons. The first one pertains to the acknowledged strength of the TBL concept for recognising modifications that are realistic, critical and provide considerable business opportunities for the organisation that allows them to convert sustainability into strategy. The other reason is that the TBL concept is closely linked to the organisational stakeholders, and this further strengthens the way the organisation relates to its stakeholders. Ekwueme et al. (2013) supported this view by asserting that the TBL concept keeps the stakeholders aware of the various activities pursued by the organisation and this improves their understanding of the organisation as a whole. In addition, the stakeholders are able to keep a check on the actual impact of the organisational activities on the environment. This brings about an increased understanding of the organisation's position and enables them to reduce the impact their operations have on the environment by cooperating with the stakeholders and holding discussions with them from time to time. Moreover, the architecture respondent said that one of the learning outcomes as an architect is that the true essence of sustainability is the balance of these things and it is absolutely true that this is not just about one of those things, it's getting a balance right. Another respondent agreed and said they were impressed with the idea of

calling the composite score a progress score. The majority of the respondents supported the idea of having TBL as representative of sustainability.

In terms of supporting the idea of having one approach to measure the sustainability of the organisations, one of the project manager respondents mentioned the Five Capitals approach as similar to SSM. However, another respondent explained that the Five Capitals approach is more about understanding sustainability based on financial concepts, while the SSM is a more comprehensive measure that is based on the three pillars of sustainability.

6.7 Star Rating System

The result of the model was designed to include a 6-star rating system, in a similar fashion to the Green Star rating system used in Australia. The Green Star rating system has a proven record of practical application and it is easy to understand and to relate to the concept of sustainability. More specifically, the SSM suggests that each of the indices related to specific stakeholders is assessed on a scale of 0-6 points. Depending on the value received after the assessment, the appropriate number of stars is awarded to each index.

The experts shared different opinions regarding the proposed star system. About 50 per cent of respondents were supportive of the star rating. For example, one group of experts were supportive of having a star rating system to show the result after the assessment, as it is a familiar and easy system. Also, a senior estimator respondent stated that star rating are a great way of measuring because of Green Star and similar systems, and people can relate to it and easily understand what the one to six star rating means. Another architecture respondent agreed with this, saying that it does enable qualitative assessment.

On the other hand, some of the experts were not supportive of the Green Star rating system and they shared completely different opinions of following the Green Star rating system as evaluation or estimation of organisational performance in the proposed model. For example, a director respondent stated that one of the biggest problems with the Green Star system is that it comes via LEED and now people are questioning themselves whether they really need a Blackwater treatment plant and will the answer be better or not.

As discussed in Section 6.4.1, the majority of experts were not supportive of the SSM presenting an assessment outcome. During the focus group discussion, the hypothetical Company X was used as an example. Company X receives a score of 3.66, which is equivalent to a 4-star rating as result of the SSM assessment. In response to this, the director respondent stated that, the danger of the number is that it doesn't provide sufficient insight and is just an average. An academic respondent agreed with this saying that it's an interesting point because the result of 3.66 could reflect a false impression.

Star Rating System Comments and Suggestions

The expert respondents had different opinions in terms of showing the outcome of the SSM assessment and whether the star rating system with progress number provides a clear understanding of the stakeholders' satisfaction. It was explained that the three key pillars of sustainability intersect with each other to form a new element called progress. This concept refers to the development of the TBL into a QBL system for the organisations and reflects the combined outcomes of the SSM model. The idea of using progress as an outcome was endorsed by most of the respondents. At the same time, slightly more than half of the experts thought that the model should also demonstrate the balance between the strengths and weaknesses of the organisation instead of just showing progress in a numerical form or through a star rating. One of the group managers stated that organisations might use star rating systems but other organisations will see that as a threat. If an assessment process is carried out, will the focus be on this result or not is a question in itself. Another respondent from the architecture group shared the same idea, that having number or star as output of the SSM assessment is not enough and may even distract from the main goal of applying the SSM that essentially seeks to not just show the end progress result of the three pillars of the sustainability but also to ensure that there is a close association and balance amongst the stakeholders group.

The same architect respondent explained why they thought that the star system needed to be supported with another method to view the outcome of the SSM, saying that one of the problems with the whole metric scenario is that once a six-star rating is achieved, the focus is lost. They thought that the purpose of SSM should be to allow organisations to comprehend their balance between the three pillars of sustainability. It is not about whether something is outstanding and can

be left like that. The same point was discussed by another academic respondent; however, they had a different perspective. They believed that we still needed to measure organisational performance as a numerical format.

After sharing different views on the outputs of SSM, the majority of the respondents from all experts groups agreed that it is still necessary to measure organisational performance in numerical format. However, the outputs in the SSM need to be supported by other methods so the balance between the three elements of sustainability can be viewed in order to show the strengths and weaknesses of the organisation. The result should be about the way the three groups interact with each other.

The majority of the experts suggested using a spider or radar diagram that is constantly changing. This is a graphical way of presenting data. It shows various factors related to one organisation, business or service (Odds, 2011). One of the academic participants suggested a system dynamics model, which is something that looks at all of the relationships over time as a method to view the outcome of SSM to support the proposed output ways (progress and stars). The expert thought that the benefit of using the progress value, star and spider/radar diagram as tools to view the outcome is that it would provide different ways of expressing the outcomes. These methods of expression are valuable because then the SSM becomes a model of balance as opposed to a model of outcomes.

Another corporate manager participant agreed with this and attempted to summarise the previous discussion by reporting that presenting this model has no right or wrong, just like a Myers-Briggs outcome. “Furthermore, when there are three circles overlapping with each other, and one of the circles is not exhibiting a satisfactory performance, then we can move things towards another circle to improve the overall situation.”

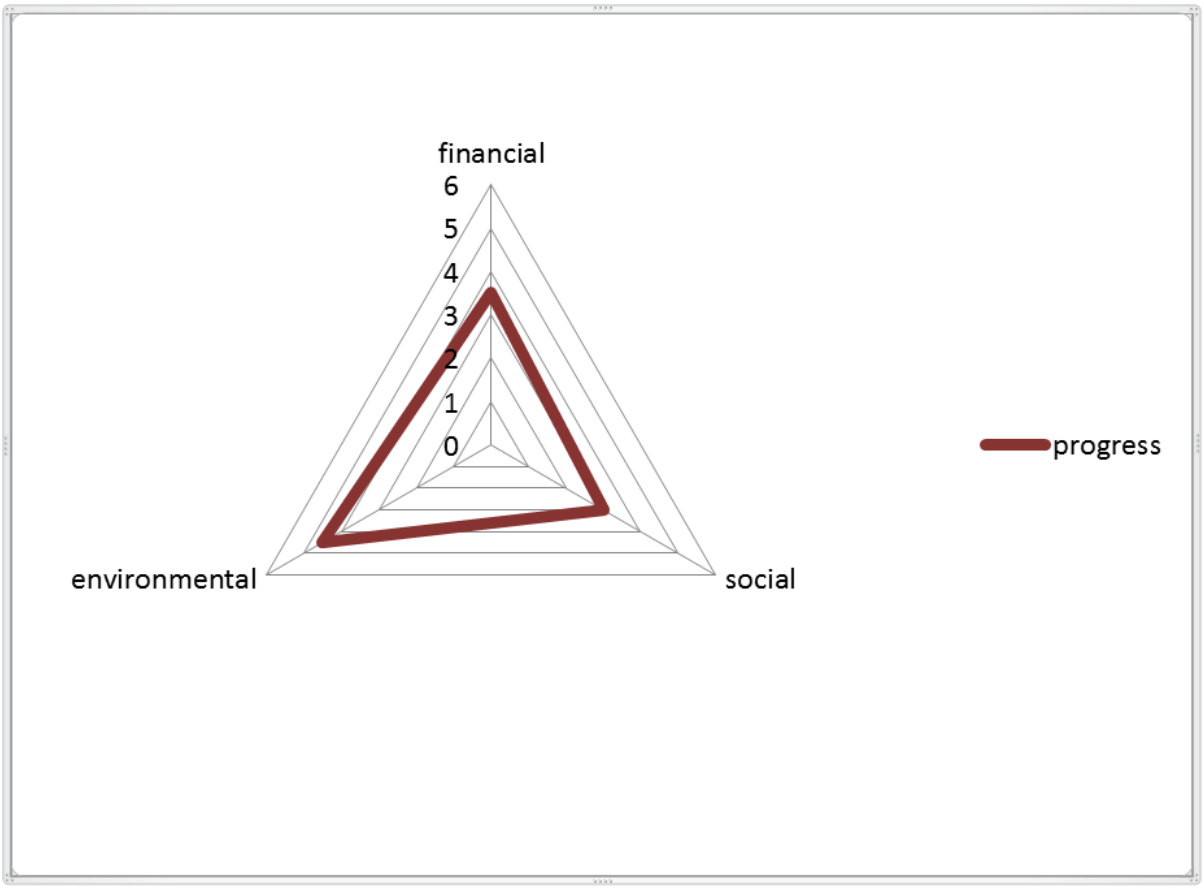

Figure 6.2 Organisation X's Performance Diagram

To enable a better and clearer understanding of the spider/radar diagram as a utility tool to support the progress value and the star number in order to present the outcome of SSM based on three pillars of sustainable development (social, economic and environment), an example is used here. Figure 6.2 provides a hypothetical example for Organisation X that shows the strengths and weakness of the organisation's performance.

Figure 6.2 shows how those three groups (financial, social and environmental) interact with each other. Managers, decision-makers, investors and even people without any corporate expertise can easily observe that Organisation X has strong environmental interests and performs much better in terms of the environment than the social or financial side. By providing these results, SSM helps identify the organisational performance and provides deeper opportunities to improve performance over time. It also presents clear performance metrics of the organisation's process and helps the viewer to identify an appropriate response.

6.8 Model Improvements

Overall, the majority of the experts were happy with the idea of the SSM as well as how the IPO approach is working. This section provides a summary of the feedback and suggestions provided through the focus group discussion in order to refine and improve the SSM. The discussion with the expert panel resulted in five key points: (1) implementation of timeframes and periodic assessment, (2) including staff engagement as part of the process in staff chain, (3) renaming the input to the community chain to be more inclusive, (4) adding a new component (equality, responsibility, and an obligation) to the output of the government chain, and (5) modifying the presentation of the outcome of the SSM.

Based on the feedback from the focus group discussion, the refined SSM can be used to assess the sustainable procurement of built infrastructure, such as a high performance green building, with four of the proposed stakeholder groups considered as generic and applicable to any sustainability initiative. The remaining two groups, staff and environment, would need a modified assessment strategy for non-built environment initiatives (see Figure 6.3).

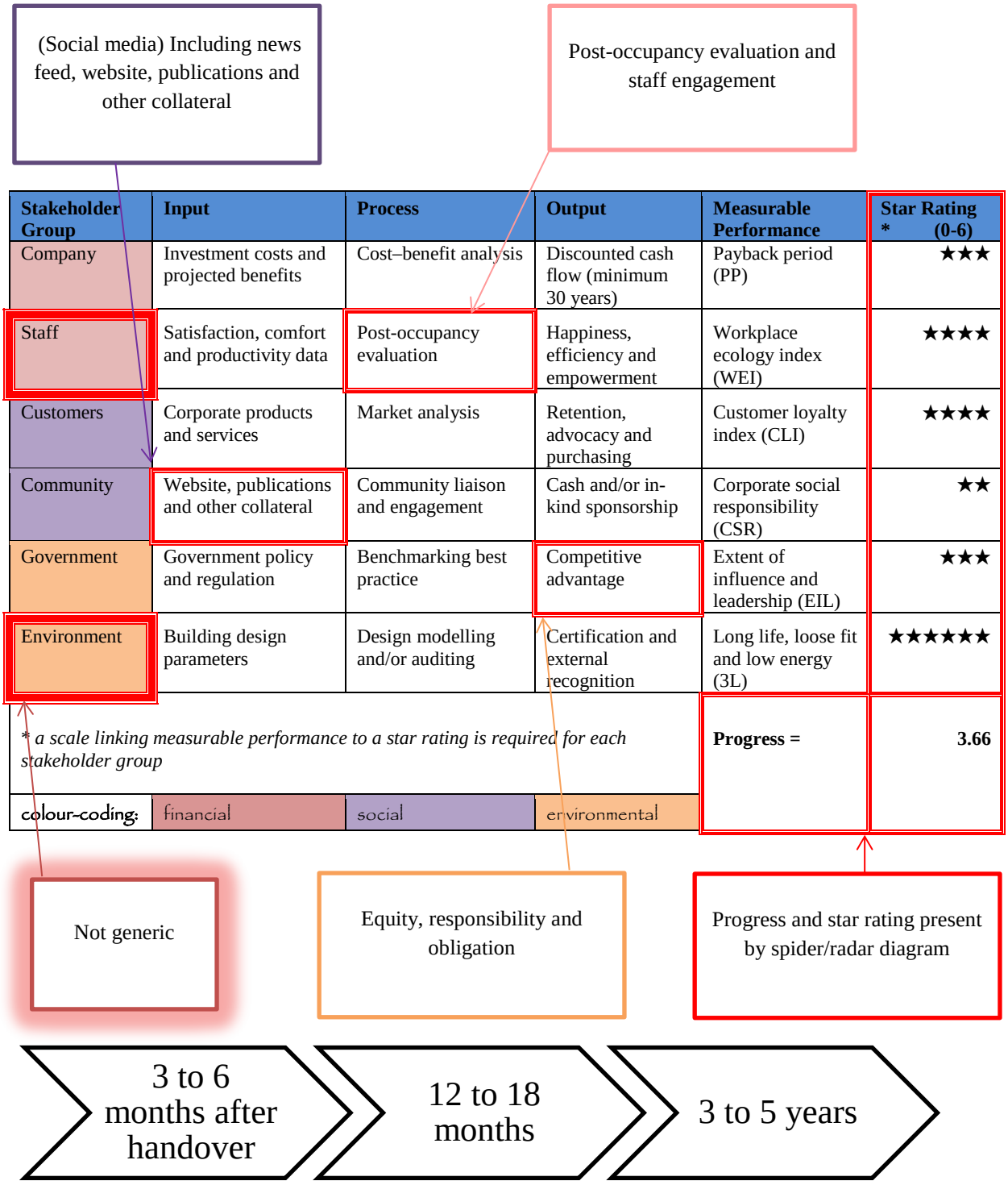

Figure 6.3 SSM (Phase Two) Improvements

Source: Author (2015)

6.8.1 Implementation Time and the Periodic Assessment

The experts suggested that in order to successfully implement the model and achieve the set objectives in terms of sustainability, it is very important to determine the implementation time and plan for periodic assessment. The model cannot be implemented overnight; rather, it requires planning, and the implementation stage needs to be divided into manageable phases or stages. The implementation timeframes for each phase and for the overall model implementation need to be identified before the model can be actually actioned. On this point, the experts emphasised that the implementation time of the organisation's assessment or evaluation should be considered in the SSM, especially for projects that are located in a new area with poor infrastructure and few services. Once the model is implemented, experts suggest that there needs to be periodic assessment so that outcomes can be studied and the model can be further improvised. Many experts were of the view that the periodic assessment must be an ongoing process.

The proposed timeframes used in the SSM's second phase are a relatively simple set of values that based on POE over three different time horizons. The operational review was suggested to be for three to six months after handover, with a performance review at 12 to 18 months and a strategic review at three to five years after handover. The main reason for this is because the POE has a proven record of practical application and it is easy to understand and to relate to the concept of sustainability in general.

6.8.2 Staff

It is important to understand that employees are an integral part of and one of the greatest assets of any organisation. Therefore, employees directly influence the financial and overall business performance of an organisation. This can be supported through the process of POE as proposed in phase one of the SSM. POE can be defined as the process of evaluating a building in a rigorous and systematic manner after it has been completed and occupied for a certain amount of time (LaGro, 2001). In the focus group discussion session, the experts suggested that staff engagement should be part of the staff chain in addition to POE. According to the Perrin's Global Workforce Study (2003), employee engagement refers to the ability and willingness of employees to help their organisation succeed by putting in dedicated effort on a sustainable basis. Dernovsek (2008) stated that employee

engagement moves an employee towards a positive behaviour which results in higher organisational commitment. Robinson et al. (2004) also explained that employee engagement refers to a positive attitude that is developed by an employee towards their organisation. The questionnaire that underpins the calculation of WEI should be extended to capture staff engagement rather than simply happiness.

6.8.3 Community

Addressing the website and publication data as inputs of the community chain through the process community engagement at SSM enables the calculation of an average value of the organisational CSR based on the level of presence and inclusion. For example, if the CSR value is low because of the limited extent of information presented on a website or in a publication, this value can be increased through an improvement in the published data, which will lead to increased community engagement and thus an increase or an improvement of organisational CSR. However, the experts thought that by having websites and publications as the only input data that only one-way communication would be evaluated. Hence, news feeds should also be used by an organisation, which will enable it to obtain feedback and maintain two-way communication with the community. After reviewing the opinions of the experts as well as related previous studies, social media data was found to be the best source of community information. So, the input of community group will be renamed "social media data" to expand the data collected, which will lead to better measurement.

6.8.4 Government

The experts suggested that the outputs of the government group should be carefully reframed and assessed in terms of the attainment of openly stated public policy goals. Moreover, they suggested that the outputs should include equity, responsibility and an obligation to protect the environment. The business organisation that satisfies the needs of the government by following all the rules and regulations will be able to reflect responsibility and equity which will in return enable it to achieve competitive advantage. These competitive advantage needs to be assessed in its broadest sense.

6.8.5 Model Outcome

After summarising the feedback on the outcome section of the SSM provided by the panel of the experts, the importance of using the progress value, star rating system and graphical tools to view the outcome that will provide different ways of

expressing the outcome is clear. The SSM then becomes a model of balance as opposed to a model of outcomes. These outcomes will not only show the scoring achieved overall and by each factor but will also help to identify the areas of improvement that the organisation needs to focus on. The inputs that were weaker and made the overall progress lower for the organisation will be easily identified and thus enable organisations to reallocate their resources towards the improvement of that particular factor or input.

6.9 Conclusion

The evaluation of the model and assessment to further improve it was carried out by employing a focus group discussion. The focus group discussion method was initiated as it provides a confirmatory approach, which is extremely useful when gathering of data is required for a topic for which little information is known. The discussion was held at the Energex building and comprised of a panel of 12 experts. The literature review, an in-depth case study of the Energex building and review of previous models resulted in the development of a holistic system for the objective measurement of corporate sustainability. This chapter assisted in ensuring that the proposed model Stakeholder Satisfaction Model (SSM) was built correctly in order to reach the research goal.

The discussion covered four key areas: SSM as a complete approach, stakeholder groups, the triple bottom line concept of sustainability and the star rating system. The NVivo 10 software package facilitated the achievement of professional results. The research emphasised the importance of understanding stakeholders' satisfaction and their impact on the sustainability of a business in general. The discussions in the beginning were open and the question-answer method was not used so that a free discussion could take place. The majority of respondents, who were from different specialisations, supported the idea of having one system to measure sustainability, considering further details for each stakeholder. The proposed idea of SSM was accepted and appreciated by most of them.

The discussion with the expert panel resulted in five key points. The first point was regarding the implementation time and the periodic assessment. The second, third and fourth points were parts of the stakeholder groups as follows: staff process, community input and government output were the elements that experts suggested should be further improved in order to meet the objectives of the SSM. The fifth

point identified as a result of expert panel discussion was regarding the model outcome and how to present it. Together these five suggestions strengthen the original model and will assist in its future commercialisation.

This chapter of this thesis provided a comprehensive analysis of the focus group discussion as well as presents details descriptions of the weakness and the strength of the proposed model based on the feedback of the expert panel to enable the reader to understand the reasons for the improvements on SSM that will be discussed in details during this chapter. However, the experts overall explained that the main goal for the SSM is not only to demonstrate the close relationship between the three pillars, indicating why it is necessary to take all of them into account, but also enabling the provision of an effective focus in terms of what problem it is attempting to solve.

CHAPTER 7:
Conclusion

7.1 Introduction

The sustainability of the built environment is an issue that is of increasing concern to people from all over the world. This thesis addresses organisational sustainability, using an example for the procurement of built infrastructure, by developing a tool that evaluates performance in the context of the satisfaction of six key stakeholders: company, staff, customers, community, government and the environment. The resultant model provides a summation of criteria that depicts 'progress' of the organisation towards reaching its sustainable development goals related to a particular initiative. This research was undertaken in a logical structure, using a grounded theory methodology.

This chapter comprises a summary of findings, a discussion of the perceived significance of the refined model and its implications for practice, reflection on the aim, objectives and research questions proposed in Chapter 1, limitations of the work and finally opportunities for further research.

7.2 Summary of Findings

Organisations need to operate efficiently in order to be successful and sustainable. Increasingly, business organisations have attempted to integrate sustainability into their operations through various initiatives that attempt to align activity with corporate strategy and achieve overall stakeholder satisfaction. However, measuring sustainability is not an easy task. Taking direction from the result of the in-depth case study analysis in this research together with a review of the existing

literature, it is deduced that in order to measure the sustainability of an organisation, it is necessary to measure the satisfaction of the organisation's stakeholders.

This thesis is based on grounded theory. Rather than collecting data to test an existing theory, a new theory is generated from a range of sources and industry input. The method comprises a number of interdependent stages. The first step involves a critical review of the literature and an overview of existing theories related to the research topic. This provides guidance and enables good understanding of the areas that this research needs to focus upon. Identifying and applying the theories developed by various scholars and researchers in the past not only increases knowledge of the state of play in this field but also enables insight from other allied disciplines. The second step reviews the research on stakeholder satisfaction models including TBL. This provides examples of related tools that have had some success in measuring organisational performance across all three dimensions of corporate sustainability. The third step involves considering a real-life case study: based on the procurement of sustainable built infrastructure. Energex's Newstead headquarters in Brisbane was selected for this purpose given its world-class 6-star Green Star rating, but more importantly because of its deliberate strategy of achieving what Energex calls '6-star stakeholder satisfaction'. Energex is a government-owned corporation and one of Australia's biggest electric power distribution companies.

The intersection of the findings from the literature review, the examination of previous satisfaction models and the Energex case study confirm that a substantial knowledge gap exists in measuring organisational performance and combining the various sustainability criteria into a common perspective. Previous research models offer proven ideas for quantifying aspects of performance, but are silent on how they can be integrated together to achieve a holistic view. The case study highlights a way forward by assessing performance through the lens of stakeholder satisfaction, but provides no solution for how that might actually be achieved. A conceptual framework is developed to address this gap. The model draws on the literature, previous sub-models and the Energex case study to develop an integrated Stakeholder Satisfaction Model (SSM), using a simple star rating as a unifying method of measurement.

Validation of the initial SSM was undertaken through review by an expert panel in an interactive focus group setting. The expert panel plays a vital role in providing feedback so that the model can be refined and made as ready as possible for future implementation into practice. Feedback provided by the focus group enables an objective assessment of the merits of the new theory and introduces the ability to further improve the SSM should any deficiencies be identified.

Throughout all of the above steps, the overarching aim of this study is to develop a model for producing an objective and holistic assessment of organisation decision-making from the perspective of six stakeholder groups (company, staff, customers, community, government and the environment). The final outcome, presented earlier as Figure 6.3, forms the blueprint for development of software that can be made available to industry on a commercial basis. If this software were to be widely accepted, it would enable new corporate initiatives to be compared on a common basis for the first time.

7.3 Contribution to Knowledge

This research makes a significant contribution to knowledge by charting a course for linking together past work that attempts to measure various aspects of sustainable development. Each can be criticised for having boundaries that exclude or ignore issues that are arguably valuable, but their combination has been problematic as there is no common unit to combine them. Drawing on the approach adopted by green building rating schemes such as LEED, BREEAM and Green Star, the SSM model converts the outcome of each of its sub-models into a standard 6-Star performance scale that enables assembly into a single outcome or recommendation. Using TBL theory as the basis, 'progress' is defined as the combination of economic, social and environmental criteria and is presented as both a star rating and a spider/radar graph, computed and tracked at three distinct points in time that reflect the pace of maturity and acceptance of the development initiative by various stakeholders.

The six key stakeholders identified in this research are linked to TBL criteria and their satisfaction levels measured using appropriate sub-models drawn from the literature (PP, WEI, CLI, CSR, EIL and 3L). In each case an input-process-output-performance chain is used to describe the new theory and integrate it with the overall SSM. Testing of the new theory via a focus group of built environment

experts enables validation and improvement of the SSM for deployment into practice.

Implications for industry comprise an ability to objectively assess the sustainability of new initiatives from the perspective of all project stakeholders. Each stakeholder is given equal weight, therefore translating into a balance between economic, social and environmental decision criteria. While the opportunity exists to weigh stakeholder importance according to some other criteria, the SSM is more focused on balancing performance and this is unlikely to occur if sub-models were to have different influence.

7.4 Reflection of Research Aims

The aim of the research is achieved to some extent. While the original ambition was to develop a generic stakeholder satisfaction model that could be applied to all types of organisational initiatives, it is now understood that some specialisation is warranted. The instance of procurement of built infrastructure that is employed throughout this research highlights that the satisfaction of staff is best measured by workplace ecology, yet this would be inappropriate for an initiative that did not involve the acquisition of physical space as is needed for a new corporate headquarters. Similarly, the measurement of satisfaction with the consumption of environmental resources based on the durability, adaptability and sustainability of the proposed facility would look quite different depending on the nature of the project at hand. Two-thirds of the SSM sub-models are generic, but staff and environment are specialised and hence need to be modified when different types of sustainability initiatives are assessed.

Therefore, it can be concluded that the original research questions are generally supported. Some adjustment is required to the metrics for staff and environment stakeholder assessment, and pursuing this idea further is considered beyond the practical bounds of this thesis. Provided alternative sub-models are quantified using a 6-Star rating scheme, the overall SSM is otherwise unaffected.

The six objectives set out in Chapter 1 have been followed and largely reflect the structure and sequence of this thesis so that the process that has been followed is logical and easy to follow. While commercialisation of the findings may result in changes to the SSM framework, a basis for further development is nevertheless created and, realistically, evolution of the model is inevitable.

7.5 Limitations

There are several limitations implicit in this research.

The first relates to the selection of sub-models within the SSM. This selection is based on an assessment of existing tools found in the literature, and therefore relies on the robustness of these tools. It would have been an option to proposed new tools, developed purposefully to meet the needs of the SSM, but this was considered to involve more time than was available during candidature. The focus has been on the overarching model, and it is possible that sub-models are treated as interchangeable as new ideas emerge or further existing tools are identified and shown to be superior in some instances. Therefore field testing of each sub-model has not been conducted.

The second relates to the case study. While the Energex corporate headquarters is a prime example for considering the influence of multiple stakeholders, a different choice of case study or multiple studies may have led to alternative frameworks. Once again, time limitations dictated that only one case study could be analysed, and Energex was open to collaboration, in close proximity, and with a strong sense that it had achieved a successful outcome. So it was an obvious choice. As analysis of a wider range of case studies would further strengthen this aspect, but time was a limiting factor.

The third relates to validation. The use of expert opinion to test theory is not new, but further testing could have taken place to demonstrate that the SSM was practical during its deployment phase. But to properly test deployment would require operationalising the model into software, and this requires external assistance and funding that was suggested by the supervisory team as being unachievable within the defined period of candidature. For this reason deployment testing is to be deferred to the commercialisation phase of this project.

7.6 Recommendations for Further Research

This work is expected to continue in the form of an external funding application to demonstrate the model's capabailities in a range of real-world situations and with a view to embedding it into common practice. Creation of software to support the models and the potential collection and analysis of results across a range of built environment applications would form a valuable line of enquiry. Other research

designed to apply SSM to different types of corporate initiatives is also a useful next step. Even in the context of built facilities, assessing the change in sustainability over time for particular initiatives would provide greater insight into how stakeholder satisfaction varies between initial deployment, the 'settling in' period and infrastructure maturity. Issues of refurbishment and renewal may introduce additional challenges and solutions.

7.7 Concluding Remarks

This research exposes the need to be able to objectively assess the performance of corporate initiatives over time in terms of their contribution to sustainability. In an era of climate change, global population growth and natural resource depletion, it is more vital than ever that the decisions made today reflect longer-term economic, social and environmental benefits. It is hoped that the SSM framework developed in this thesis, and its subsequent commercialisation, will make a difference to improving the quality of our world through a more robust and transparent decision-making paradigm.

Time will tell.

References

Accenture. (2014). *The consumer study: from marketing to mattering*. Retrieved April 7, 2015 from: http://www.accenture.com/SiteCollectionDocuments/PDF/Accenture-Consumer-Study-Marketing-Mattering.pdf

Acuff, Z., Harris, A., Larsen, L., Magnus, B., & Pumpbrey, A. (2005). Building Green for the Future: Case Studies of Sustainable Development in Michigan. *Ann Arbor, Michigan: Urban Catalyst Associates, University of Michigan*.

Adler, M., & Posner, E. A. (2009). New foundations of cost–benefit analysis. *Regulation & Governance, 3*(1), 72-83.

AGATC (Australian Government Australian Trade Commission). (2015). *Green Buildings Industry overview.* Retrieved April 7, 2015 from: https://www.austrade.gov.au/greenbuildings/

Agle, B. R., Nagarajan, N. J., Sonnenfeld, J. A., & Srinivasan, D. (2006). Does CEO charisma matter? An empirical analysis of the relationships among organizational performance, environmental uncertainty, and top management team perceptions of CEO charisma. *Academy of management Journal, 49*(1), 161-174.

Ahmed, M. H. B., & Rashid, R. (2009). *Thermal performance of rooftop greenery system in tropical climate of Malaysia.* Paper presented at the Proceedings of the conference on technology & sustainability in the built environment.

Alexander, C. S., Miesing, P., & Parsons, A. L. (2005). How important are stakeholder relationships? *Academy of Strategic Management Journal, 4*, 1-7.

Alfred, A. M., & Adam, R. F. (2009). Green management matters regardless. *The Academy of Management Perspectives, 23*(3), 17-26.

Alhaddi, H. (2015). Triple Bottom Line and Sustainability: A Literature Review. *Business and Management Studies, 1*(2), 6-10.

Alkhawaja, A. (2015). *Environmental Auditing: Modelling Office Workplace Ecology* (Unpublished PhD thesis). Bond University, Gold Coast, Queensland Australia.

Allenby, B. (2000). Industrial ecology, information and sustainability. *Foresight, 2*(2), 163-171.

Alrazi, B., de Villiers, C., & van Staden, C. (2010). A Framework for The Integration Of Environmental Legitimacy, Accountability And Proactivity (ELAP). *Environment, 6*, 8.

Al Yahmady, H. H., & Alabri, S. S. (2013). Using Nvivo for Data Analysis in Qualitative Research. *International Interdisciplinary Journal of Education, 2*(2), 181-186.

Anand, G., & Kodali, R. (2008). Benchmarking the benchmarking models. *Benchmarking: An International Journal, 15*(3), 257-291.

Anderson, K., & McAdam, R. (2004). A critique of benchmarking and performance measurement: lead or lag? *Benchmarking: An International Journal, 11*(5), 465-483.

Andrade, J. B., & Bragança, L. (2011). Analysis of the impacts of economic and social indicators to sustainability assessment.

Arch Daily. (2013). Energex Headquarters / Cox Rayner Architects + BVN Donovan Hill. Retrieved January 7, 2015 from: http://www.archdaily.com/397379/energex-headquarters-cox-rayner-architects-bvn-donovan-hill/

Archel, P., Fernández, M., & Larrinaga, C. (2008). The organizational and operational boundaries of triple bottom line reporting: a survey. *Environmental management, 41*(1), 106-117.

Architecture and Design. (2010). World Architecture award winners collaborate in Brisbane. Retrieved January 7, 2015 from: http://www.architectureanddesign.com.au/news/buildings/world-architecture-award-winners-collaborate-in-br

Argüden, R. Y. (2010). A corporate governance model: Building responsible boards and sustainable businesses: International Finance Corporation. Retrieved April 12, 2015 from: http://www.ifc.org/wps/wcm/connect/1ff2c18048a7e72daa5fef6060ad5911/GCGF%2BPSO%2Bissue%2B17%2B3-4-10.pdf?MOD=AJPERES

Armaghani, B. (2008). Assessment and Development of A Framework for The JORDAN Green Building Council. *United States Agency for International Development*. USAID. Jordan.

Armitage, L., Murugan, A., & Kato, H. (2011). Green offices in Australia: a user perception survey. *Journal of Corporate Real Estate, 13*(3), 169-180.

Arora, P. (2013). Incorporate Corporate Social Responsibility Strategy into Business. *The SIJ Transactions on Industrial, Financial & Business Management (IFBM), 1*(2).

Asdrubali, F., Bonaut, M., Battisti, M., & Venegas, M. (2008). Comparative study of energy regulations for buildings in Italy and Spain. *Energy and buildings, 40*(10), 1805-1815.

Asma'Mokhtar, U., & Yusof, Z. M. (2015). Function-Based Classification: Model Development and Validation. *Open Journal of Social Sciences, 3*(03), 211.

Attiany, M. S. (2014). Competitive Advantage Through Benchmarking: Field Study of Industrial Companies Listed in Amman Stock Exchange. *Journal of business studies quarterly, 5*(4), 41.

Auramo, J., Kauremaa, J., & Tanskanen, K. (2004). Benefits of IT in supply chain management–an explorative study of progressive Finnish Companies. *Department of Industrial Engineering & Management, Helsinki University of Technology*.

Awomewe, A., & Ogundele, O. (2008). The importance of the pay back method in capital budgeting decision. *Unpublished Master Thesis, Blekinge Institute of Technology*.

Bakharia, A. (2014). Interactive content analysis: evaluating interactive variants of non-negative Matrix Factorisation and Latent Dirichlet Allocation as qualitative content analysis aids.

Bakiev, E. (2012). Organizational Ecology. Zirve University.

Bal, M., Bryde, D., Fearon, D., & Ochieng, E. (2013). Stakeholder engagement: Achieving sustainability in the construction sector. *Sustainability, 5*(2), 695-710.

Bauer, R., Guenster, N., & Otten, R. (2004). Empirical Evidence on Corporate Governance in Europe: The Effect on Stock Returns, Firm Value, and Performance (Digest Summary). *Journal of Asset Management, 5*(291-104).

Baum, J.A.C., & Amburgey, T.L. (2002). Organizational Ecology. *In The Blackwell companion to organizations*, edited by J. A. C. Baum, 304- 26. Oxford : Blackwell.

Bazeley, P., & Jackson, K. (2013). *Qualitative data analysis with NVivo*: Sage Publications Limited.

Beech, D. (2013). Quadruple bottom line for sustainable prosperity. Cambridge Leadership Development. Retrieved April 12, 2015 from:http://cambridgeleadershipdevelopment.com/quadruple-bottom-line-for-sustainable-prosperity/

Beecham, S., Hall, T., Britton, C., Cottee, M., & Rainer, A. (2005). Using an expert panel to validate a requirements process improvement model. *Journal of Systems and Software, 76*(3), 251-275.

Bell, S., & Morse, S. (2008). *Sustainability indicators: measuring the immeasurable?* : Earthscan.

Bell, S., & Morse, S. (2013). *Measuring sustainability: Learning from doing*: Routledge.

Berelson, B. (1952). Content analysis in communication research.

Berens, G., Van Riel, C. B., & Van Rekom, J. (2007). The CSR-quality trade-off: When can corporate social responsibility and corporate ability compensate each other? *Journal of Business Ethics, 74*(3), 233-252.

Bergstrom, D., Rose, K., Olinger, J., & Holley, K. (2011). *The community engagement guide for sustainable communities*. Retrieved March 20, 2015 from: http://www.policylink.org/sites/default/files/COMMUNITYENGAGEMENTGUIDE_LY_FINAL%20(1).pdf

Best, R., Langston, C. A., & De Valence, G. (2003). *Workplace strategies and facilities management*: Routledge.

Bibri, M. (2008). Corporate sustainability/CSR communications and value creation: A marketing approach.

Birch, D. (2002). Social Economic and Environmental Capital; Corporate Citizenship in a New Economy. *Alternative Law Journal*, 27(1), 3-6.

Bishop, J. (2013). *The Economics of Ecosystems and Biodiversity in Business and Enterprise*: Routledge.

Blackburn, W. R. (2007). *The sustainability handbook: The complete management guide to achieving social, economic, and environmental responsibility*: Environmental Law Institute.

Blankenship, J. C. (2004). Competitive Advantage through Business Performance Management. *Issues in Information Systems, 1*, 29-35.

Bloor, M. (2001). *Focus groups in social research*: Sage.

Bodart, M., & Evrard, A. (2011). *PLEA 2011: Architecture & Sustainable Development: Conference Proceedings of the 27th International Conference on Passive and Low Energy Architecture, Louvain-la-Neuve, Belgium, 13-15 July, 2011*: Presses universitaires de Louvain.

Bolton, R. N., Lemon, K. N., & Verhoef, P. C. (2004). The theoretical underpinnings of customer asset management: a framework and propositions for future research. *Journal of the Academy of Marketing Science, 32*(3), 271-292.

Bond, A. J., Morrison-Saunders, A., & Howitt, R. (2012). *Sustainability assessment: Pluralism, practice and progress*: Routledge.

Bosteels, T., Tipping, N., Botten, C., & Tippet, M. (2010). Sustainability Benchmarking Toolkit for Commercial Buildings: Principles for Best Practice. *Better Buildings Partnership*.

Bowen, F., Newenham-Kahindi, A., & Herremans, I. (2010). When suits meet roots: The antecedents and consequences of community engagement strategy. *Journal of Business Ethics, 95*(2), 297-318.

Bowen, H. R. (2013). *Social responsibilities of the businessman*: University of Iowa Press.

Boyle, M.-E., Ross, L., & Stephens, J. C. (2011). Who has a stake? How stakeholder processes influence partnership sustainability. *Gateways: International Journal of Community Research and Engagement, 4*, 100-118.

Brandlogic. (2012). *Keys to sustainability leadership: Five best practices*. Retrieved March 26, 2015 from: http://www.sustainabilityleadershipreport.com/downloads/Brandlogic5BestPractices.pdf

Brandon, P. S., & Lombardi, P. (2010). *Evaluating sustainable development in the built environment*: John Wiley & Sons.

Brebbia, C., & Beriatos, E. (2011). Sustainable Development and Planning.Southampton, UK: WIT Press.

Bresnahan, T., Brynjolfsson, E., & Hitt, L. (2002). Information Technology, Workplace Organization, and the Demand for Skilled Labor: Firm-Level Evidence. Quarterly Journal of Economics, 117 (1), pp.339-376.

Brodwin, D. (2015). *Save money, live sustainably?* USNews. Retrieved May 3, 2015 from: http://www.usnews.com/opinion/economic-intelligence/2015/03/30/new-wal-mart-program-shows-how-hard-sustainability-ratings-are

Brown, D., Dillard, J., & Marshall, R. S. (2006). *Triple bottom line: a business metaphor for a social construct*: Universitat Autònoma de Barcelona. Departament d'Economia de l'Empresa.

Brown, S., Bessant, J. R., & Lamming, R. (2013). *Strategic operations management*: Routledge.

Brundtland, G. H. (1987). World commission on environment and development. Our common future, 8-9.

Bryant, A., & Charmaz, K. (2007). *The Sage handbook of grounded theory*: Sage.

Bulsara, C. (2014). Using a Mixed Methods Approach to Enhance and Validate Your Research. *Retrieved March, 29*.

Burrell, N. A., Allen, M., Gayle, B. M., & Preiss, R. W. (2014). *Managing interpersonal conflict: Advances through meta-analysis*: Routledge.

Campbell, H. F., & Brown, R. P. (2015). *Cost-Benefit Analysis: Financial And Economic Appraisal Using Spreadsheets*: Routledge.

Carmeli, A. (2005). Perceived external prestige, affective commitment, and citizenship behaviors. *Organization Studies, 26*(3), 443-464.

Carroll, A., & Buchholtz, A. (2014). *Business and society: Ethics, sustainability, and stakeholder management*: Cengage Learning.

Castillo, R., & Chung, N.C. (2004). The Value of Sustainability.*Center for Integrated Facility Engineering*

CGBC (Canada Green Building Council). (2014). *Canada green building trends: benefits driving new and retrofit market*. Retrieved May 27, 2015 from: http://www.cagbc.org/cagbcdocs/resources/CaGBC%20McGraw%20Hill%20Cdn%20Market%20Study.pdf

Chai, N. (2009). *Sustainability Performance Evaluation System in Government: a balanced scorecard approach towards sustainable development*: Springer Science & Business Media.

Charmaz, K. (2006). Constructing grounded theory: A practical guide through qualitative analysis (Introducing Qualitative Methods Series).

Chaudhuri, A. (2006). *Emotion and reason in consumer behavior*: Routledge.

Chereja, M., Cândea, D., & Edum-Fotwe, F. (2013). A Construct for Measuring Stakeholder Engagement in Sustainable Construction Developments.

Chinyio, E., & Olomolaiye, P. (2009). *Construction stakeholder management*: John Wiley & Sons.

Chiou, J. S., & Droge, C. (2006). Service quality, trust, specific asset investment, and expertise: Direct and indirect effects in a satisfaction-loyalty framework. *Journal of the Academy of Marketing Science, 34*(4), 613-627.

Clow, K. E., & Baack, D. (2009). *Marketing management: a customer-oriented approach*: Sage Publications.

CME. (2012). *Electricity prices in Australia: an international comparison*. Retrieved May 27, 2015 from: https://www.google.com/search?q=Electricity+prices+in+Australia%3A+an+international+comparison.&oq=Electricity+prices+in+Australia%3A+an+international+comparison.&aqs=chrome..69i57.342j0j4&sourceid=chrome&es_sm=93&ie=UTF-8

Cohen, G. (2006). First, do no harm. *Designing the 21 st Century Hospital*, 1.

Colebrook Bosson Saunders. (2014). *Energex*. Retrieved January 7, 2015 from: http://www.colebrookbossonsaunders.com/en-gb/case-studies/multi-screen/energex

Collins, C. M., Steg, L., & Koning, M. A. (2007). Customers' values, beliefs on sustainable corporate performance, and buying behavior. *Psychology & Marketing, 24*(6), 555-577.

Commonwealth of Australia. (2011). Sustainable Australia; Sustainable Communities. Australian Government. Retrieved January 17, 2015 from:

http://www.environment.gov.au/sustainability/population/publications/pubs/population-strategy-overview.pdf

Conejos, S. (2013). Designing for future building adaptive reuse, PhD thesis, Bond University, Australia.

Conejos, S., Langston, C., & Smith, J. (2013). AdaptSTAR model: A climate-friendly strategy to promote built environment sustainability. *Habitat international, 37*, 95-103.

Conrad, L., & Feltz, J. (2009). Climate Change: What technology companies should know, Because change happenz. Risk engineering services are provided by Zurich Services Corporation.

Constructing Excellence. (2004). *Corporate Social Responsibility fact sheet*. Retrieved March 5, 2015 from: http://cenew.idnet.net/pdf/fact_sheet/social_responsibility.pdf

Cox, A. (1999). Power, value and supply chain management. *Supply Chain Management: An International Journal, 4*(4), 167-175.

Coyle, E., & Simmons, R. A. (2014). Understanding the global energy crisis.

Cromwell Insight. (2012). *Energex House scores 5.5 Star NABERS rating*. Retrieved January 7, 2015 from:http://www.cromwellinsight.com.au/energex-house-scores-5-5-star-nabers-rating/

Cromwell. (2014). *Energex House*. Retrieved January 7, 2015 from: http://www.cromwell.com.au/property-portfolio/queensland/400/energex-house

Crouch, C., & Maclean, C. (2011). *The responsible corporation in a global economy*: Oxford University Press.

Crum, M., Poist, R., Carter, C. R., & Liane Easton, P. (2011). Sustainable supply chain management: evolution and future directions. *International Journal of Physical Distribution & Logistics Management, 41*(1), 46-62.

Daily Commercial News. (2013). Green buildings benefit stakeholders, according to WorldGBC report. Retrieved August 1st, 2014 from: http://www.mccarthy.com/benefits-of-green-building/#sthash.HQtbBESp.dpuf

Damian, A. (2004). Airy offices create 15% work boost. *BuildingDesign, 1634*, p5.

Data Monitor . (2014). Energex Limited: The company profile. Data Monitor. Retrieved January 7, 2015 from: http://www.datamonitor.com/store/product/energex_limited?productid=12F5E106-C79B-48E9-BB0A-40FD9D5AD4D4

De Wever, B., Schellens, T., Valcke, M., & Van Keer, H. (2006). Content analysis schemes to analyze transcripts of online asynchronous discussion groups: A review. *Computer & Education*, 46, 6-28.

De Witte, M., & Jonker, J. (2006). *Management models for corporate social responsibility*: Springer.

Deb, T. (2008). *Performance appraisal and management.*New Delhi, IN: Excel Books.

Delai, I., & Takahashi, S. (2011). Sustainability measurement system: a reference model proposal. *Social Responsibility Journal, 7*(3), 438-471.

Denniss, D., & Richardson, D. (2013). Corporate power in Australia. Retrieved Jun 18, 2015 from: http://www.tai.org.au/node/1939

Department for Communities and Local Government. (2008). National Calculation Methodology (NCM) modelling guide (for buildings other than dwellings in England andWales) Retrieved September 17, 2012 from: http://www.communities.gov.uk/documents/planningandbuilding/pdf/1016185.pdf

Department of Public works. (2008). Environmental Rating Systems and Government Buildings. Retrieved September 21, 2012 from: http://www.hpw.qld.gov.au/SiteCollectionDocuments/BAPFEnviroratingSystems.pdf

Dernovsek, D. (2008). Creating highly engaged and committed employee starts at the top and ends at the bottom line Credit Union Magazine, May 2008. Credit Union National Association: Inc.

Dervitsiotis, K. N. (2000). Benchmarking and business paradigm shifts. *Total Quality Management, 11*(4-6), 641-646.

Dhiman, S. (2008). Products, people, and planet: the triple bottom-line sustainability imperative. *Journal of Global Business Issues, 2*(2), 51-57.

Ding, G. K. (2008). Sustainable construction—The role of environmental assessment tools. *Journal of Environmental Management, 86*(3), 451-464.

Dionne, S. D., Yammarino, F. J., Atwater, L. E., & Spangler, W. D. (2004). Transformational leadership and team performance. *Journal of organizational change management, 17*(2), 177-193.

Divandari, A., & Yousefi, H. (2011). Balanced Scorecard: A Tool for Measuring Competitive Advantage of Ports with Focus on Container Terminals. *International Journal of Trade, Economics and Finance, 2*(6), 472-477.

Dixon, T., Colantonio, A., Shiers, D., Gallimore, P., Reed, R., Wilkinson, S., et al. (2012). A green Profession? RICS members and the sustainability agenda.

Douglas, J. (2006). *Building adaptation*: Routledge.

Dowling, P., Festing, M., & Engle Sr, A. D. (2008). *International human resource management: Managing people in a multinational context*: Cengage Learning.

Duhaime, I. M., Stimpert, L., Chesley, J. J., & Chesley, J. (2012). *Strategic thinking: today's business imperative*: Routledge.

Ehrhardt, M., & Brigham, E. (2013). *Corporate finance: A focused approach*: Cengage Learning.

Eichholtz, P., Kok, N., & Quigley, J. M. (2010). Doing well by doing good? Green office buildings. *The American Economic Review*, 2492-2509.

Ekatah, I., Samy, M., Bampton, R., & Halabi, A. (2011). The relationship between corporate social responsibility and profitability: the case of Royal Dutch Shell Plc. *Corporate Reputation Review, 14*(4), 249-261.

Ekwueme, C., Egbunike, C., & Onyali, C. (2013). Benefits of triple bottom line disclosures on corporate performance: an exploratory study of corporate stakeholders. *Journal of management and sustainability, 3*(2), p79.

El Maraghy, W., & El Maraghy, H. (2014). A New Engineering Design Paradigm–The Quadruple Bottom Line. *Procedia CIRP, 21*, 18-26.

Elkington, J. (1997). Cannibals with forks. *The triple bottom line of 21st century*.

Ellis, J., & Bosi, M. (2000). Emission baselines. Estimating the unknown: OECD and IEA, Paris. Retrieved Jun 7, 2015 from: http://www. ghgprotocol. org/projectmodule. htm.

Ellis, S., & Sheridan, L. (2014). A critical reflection on the role of stakeholders in sustainable tourism development in least-developed countries. *Tourism Planning & Development, 11*(4), 467-471.

Ellison, L., Sayce, S., & Smith, J. (2007). Socially responsible property investment: quantifying the relationship between sustainability and investment property worth. *Journal of Property Research, 24*(3), 191-219.

Elo, S., & Kyngäs, H. (2008). The qualitative content analysis process. *Journal of advanced nursing, 62*(1), 107-115.

Elo, S., Kääriäinen, M., Kanste, O., Pölkki, T., Utriainen, K., & Kyngäs, H. (2014). Qualitative Content Analysis. *SAGE Open, 4*(1), 2158244014522633.

Energex Limited. (2012). Statement of corporate intent 2011/2012. Retrieved January 7, 2015 from: http://www.parliament.qld.gov.au/Documents/TableOffice/TabledPapers/2012/5412T1140.pdf

Energex Limited. (2013). *Annual report 2013.* Retrieved January 7, 2015 from:https://www.energex.com.au/__data/assets/pdf_file/0003/167322/Annual-Report-2012-13.pdf

Energex Limited. (2014). *We are Energex*. Retrieved January 7, 2015 from:https://www.energex.com.au/about-us/we-are-energex

Energex. (2011). Sustainability report 2010/2011.Retrieved April 17, 2015 from: https://www.energex.com.au/__data/assets/pdf_file/0003/39585/Sustainability-Report-2010-11_FINAL_v2.2.pdf

Energex. (2014). Part A: Annual Performance Report. Retrieved March 7, 2015 from:https://www.energex.com.au/__data/assets/pdf_file/0019/218305/Annual-Report-2013-14-Form-8028.pdf

Energex. (2014a). Energex Corporate Sustainability Policy.Retrieved March 10, 2015 from: https://www.energex.com.au/__data/assets/pdf_file/0015/31335/Form-9300-Corporate-Sustainability-Policy-2014.pdf

Epstein, M. J., & Buhovac, A. R. (2014). *Making sustainability work: Best practices in managing and measuring corporate social, environmental, and economic impacts*: Berrett-Koehler Publishers.

Esty, D., & Winston, A. (2009). *Green to gold: How smart companies use environmental strategy to innovate, create value, and build competitive advantage*: John Wiley & Sons.

Eweje, G., & Perry, M. (2011). Business and Sustainability: Concepts, Strategies and Changes. Bingley, UK: Emerald Group Publishing Limited.

Fassin, Y. (2009). The stakeholder model refined. *Journal of Business Ethics, 84*(1), 113-135.

Fauzi, H., Svensson, G., & Rahman, A. A. (2010). "Triple Bottom Line" as "Sustainable Corporate Performance": A Proposition for the Future. *Sustainability, 2*(5), 1345-1360.

Fischer, E. A. (2010). *Issues in green building and the federal response: An introduction*: DIANE Publishing.

FKP Limited Video Blog. (2012). The Energex Building at Gasworks, Newstead [Video file]. Retrieved October 10, 2014 from: https://www.youtube.com/watch?v=EqseeQ2s6bQ

FKP. (2008). FKP cleared to start work at Newstead Riverpark's Gasworks. ASX Release

FKP. (2009). *22 Breakfast Creek Rd Newstead.*ASX Release

Flowers, P. (2009). *Research philosophies-importance and relevance*. Cranfield: Cranfield School of Management Press.

Forrester, J., Swartling, A., & Lansdale, K. (2008). Stakeholder engagement and the work of SEI: an empirical study. Stockholm, SW: Stockholm Environment Institute. Retrieved March 3, 2015 from: http://www.seiinternational.org/mediamanager/documents/Publications/Policyinstitutions/stakeholder_engagement_workof_sei.pdf

Freeman, R. E. (2004). The stakeholder approach revisited. *Zeitschrift für Wirtschafts-und Unternehmensethik, 5*(3), 228-241.

Freeman, R. E., Wicks, A. C., & Parmar, B. (2004). Stakeholder theory and "the corporate objective revisited". *Organization science, 15*(3), 364-369.

Friedman, A. L., & Miles, S. (2006). *Stakeholders: Theory and Practice: Theory and Practice*: Oxford University Press.

Fry, L. W. (2003). Toward a theory of spiritual leadership. *The leadership quarterly, 14*(6), 693-727.

Fuguitt, D., & Wilcox, S. J. (1999). *Cost-benefit analysis for public sector decision makers*: Greenwood Publishing Group.

Fuller, S. J. (2002). *Expert Panels and Customer Group Sessions*. Informedix Marketing Research, Inc,

Futurarc. (2011). *Energex headquarters- Newstead Riverpark*. Retrieved January 7, 2015 from: http://www.futurarc.com/index.cfm/projects/projects-2011/2011-3q-energex-hq-newstead-riverpark/

Gardner, R. (1993). *The opportunities and challenges posed by refurbishment*. Paper presented at the Proceedings of Building Science Forum of Australia.

GBC (Green Building Canada). (2015). *Why build green?*. Retrieved June 2, 2015 from: http://www.greenbuildingcanada.ca/green-building-guide/why-build-green/

GBCA (Green Building Council Australia). (2013). *City of Gosnells Civic Centre Redevelopment Project*. Retrieved May 2, 2015 from: https://www.gbca.org.au/green-star/green-building-case-studies/city-of-gosnells-civic-centre-redevelopment-project/

GBCA (Green Building Council Australia). (2015). What is Green Star?. Retrieved April 27, 2015 from: https://www.gbca.org.au/green-star/green-star-overview/what-is-green-star/

GBCA. (2012). People are talking about green buildings how can you get involved. Green Building Council Australia. Retrieved September 21, 2012 from: http://www.gbca.org.au/uploads/47/2607/GBCA_Guide%20for%20Local%20Government.pdf

Gerrish, K., & Lathlean, J. (2015). *The research process in nursing*. Chichester, UK: John Wiley & Sons.

Global Reporting Initiative. (2002). *Sustainability Reporting Guidelines - 2002*. Retrieved January 10, 2015 from: http://www.wbcsdcement.org/pdf/tf6/GRI_guidelines_print.pdf

Godfrey, P. C., Merrill, C. B., & Hansen, J. M. (2009). The relationship between corporate social responsibility and shareholder value: An empirical test of the risk management hypothesis. *Strategic Management Journal, 30*(4), 425-445.

Goel, P. (2010). Triple Bottom Line Reporting: An Analytical Approach for Corporate Sustainability. *Journal of Finance, Accounting & Management, 1*(1).

Gomes, D. R. (2009). Organizational change and job satisfaction: the mediating role of organizational commitment. Exedra, 1, 177-196.

Gompers, P. A., Ishii, J. L., & Metrick, A. (2001). *Corporate governance and equity prices*: National bureau of economic research.

Gordon, A. (1972). Designing for survival: the President introduces his long life/loose fit/low energy study, Royal Institute of British Architects Journal, 79(9) 374-376.

Gossy, G. (2008). *A stakeholder rationale for risk management: Implications for corporate finance decisions*: Springer Science & Business Media.

Goswami, D. Y., & Kreith, F. (2007). *Handbook of energy efficiency and renewable energy*: Crc Press.

Gotze, U., Northcott, D., & Schuster, P. (2015). Selected Further Applications of Investment Appraisal Methods *Investment Appraisal* (pp. 105-159): Springer.

Gould, R. (2012). Open innovation and stakeholder engagement. *Journal of technology management & innovation, 7*(3), 1-11.

Gray, R., & Milner, M. (2004). Towards reporting on the triple bottom line: mirage, methods and myths.

Green Building Council Australia. (2008). *33 Breakfast Creek Road*. Retrieved January 7, 2015 from: http://www.gbca.org.au/project-profile.asp?projectID=289

Grierson, D. (2011). Architectural Design Principles and Processes for Sustainability. *CIC Start Online Innovation Review, 9*, 51-58.

Gummeson, E. (1999). Total Relationship Marketing—Rethinking Marketing Management: From 4 P's to 30 R's: Oxford, UK: Butterworth-Heineman.

Gunay, S. G. (2008). *Corporate Governance Theory: A Comparative Analysis of Stockholder and Stakeholder Governance Models*: iUniverse.

Guo, J., Sun, L., & Li, X. (2009). Corporate social responsibility assessment of Chinese corporations. *International Journal of Business and Management, 4*(4), p54.

Gupta, S., Hanssens, D., Hardie, B., Kahn, W., Kumar, V., Lin, N., et al. (2006). Modeling customer lifetime value. *Journal of Service Research, 9*(2), 139-155.

Haberberg, A., & Rieple, A. (2008). *Strategic management: theory and application*: Oxford University Press.

Hadjri, K., & Crozier, C. (2009). Post-occupancy evaluation: purpose, benefits and barriers. *Facilities, 27*(1/2), 21-33.

Hampel, P. S., & Martinsons, M. G. (2009). Developing international organizational change theory using cases from China, *Human Relations*, 62(4), 459-499

Harvey, B., & Brereton, D. (2005). *Emerging models of community engagement in the Australian minerals industry.* Paper presented at the United Nations engaging communities conference, Brisbane.

Hatch, M.J., & Cunliffe, A.L. (2006). *Organization theory.* 2nd ed. Oxford: Oxford University Press.

Hatry, H. P. (2006). *Performance measurement: Getting results*: The Urban Insitute.

Hawawini, G., & Viallet, C. (2010). *Finance for executives: Managing for value creation*: Cengage Learning.

Hayes, B. (2013). What is Customer Loyalty? Part 2: A Customer Loyalty Measurement Framework. Business Broadway. Retrieved May 7, 2015 from: http://businessoverbroadway.com/customer-loyalty-measurement-framework

Hayes, B. E. (2008). *Measuring customer satisfaction and loyalty: survey design, use, and statistical analysis methods*: ASQ Quality Press.

Hemmati, M. (2002). *Multi-stakeholder processes for governance and sustainability: beyond deadlock and conflict*: Routledge.

Henn, R. L., Hoffman, A. J., & Biggart, N. W. (2013). *Constructing green: the social structures of sustainability*: MIT Press.

Henriques, A., & Richardson, J. (2013). *The triple bottom line: Does it all add up*: Routledge.

Hernandez, P., Burke, K., & Lewis, J. O. (2008). Development of energy performance benchmarks and building energy ratings for non-domestic buildings: An example for Irish primary schools. *Energy and buildings, 40*(3), 249-254.

Hidayati, N. D. (2011). Pattern of corporate social responsibility programs: a case study. *Social Responsibility Journal, 7*(1), 104-117.

Hill, R. P., Stephens, D., & Smith, I. (2003). Corporate social responsibility: an examination of individual firm behavior. *Business and Society Review, 108*(3), 339-364.

Ho, L. C., & Taylor, M. E. (2007). An Empirical Analysis of Triple Bottom-Line Reporting and its Determinants: Evidence from the United States and Japan. *Journal of International Financial Management & Accounting, 18*(2), 123-150.

Hopkins, M. (2012). *Corporate social responsibility and international development: is business the solution?* : Earthscan.

Hsieh, H. F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qualitative health research, 15*(9), 1277-1288.

Huber, M., & O'Gorman, S. (2008). *From Customer Retention to a Holistic Stakeholder Management System*: Springer.

Husted, B. W., & Allen, D. B. (2010). *Corporate social strategy: Stakeholder engagement and competitive advantage*: Cambridge University Press.

Hyde, R., Watson, S., Cheshire, W., & Thomson, M. (2007). *The environmental brief: pathways for green design*: Taylor & Francis.

IFMA Foundation. (2010). Sustainability How-To Guide Series. Retrieved 28 April 2012 from: http://www.fmsystems.com/greenratingsguide/buildingratingsystems.pdf

IGBC (International Green Building Conference). (2013). *Snippets of 3rd green building masterplan*. Retrieved May 22, 2015 from: http://www.bca.gov.sg/GreenMark/others/BGreen_4_2013.pdf

International Institute for Sustainable Development. (2004). *Issue briefing note: Stakeholder Engagement, ISO and Corporate Social Responsibility*. Retrieved March 10, 2015 from:https://www.iisd.org/pdf/2004/standards_stakeholder_engagement.pdf

IRPNC (Independent Review Panel on Network Costs). (2012). *Interim Report: Summary findings and draft recommendations*. Retrieved March 15, 2015 from:https://www.dews.qld.gov.au/__data/assets/pdf_file/0019/30628/IRP-interim-report.pdf

Isa, F. M., Hin, C. W., & Yunus, J. M. (2011). Change management initiatives and job satisfaction among salespersons in Malaysian direct selling industry. *Asian Journal of Business and Management Sciences, 1*(7), 106-121.

Ismail, A. I., Rose, R. C., Abdullah, H., & Uli, J. (2010). The relationship between organisational competitive advantage and performance moderated by the age and size of firms. *Asian Academy of Management Journal, 15*(2), 157-173.

ITU (International Telecommunications Union). (2012). Go Green: Sustainable Buildings. Geneva, SW: ITU.

Iwaro, J., & Mwasha, A. (2013). The impact of sustainable building envelope design on building sustainability using Integrated Performance Model. *International Journal of Sustainable Built Environment, 2*(2), 153-171.

Jackson, A., Boswell, K., & Davis, D. (2011). Sustainability and triple bottom line reporting–What is it all about. *International Journal of Business, Humanities and Technology, 1*(3), 55-59.

Jensen, M. C. (2001). Value maximization, stakeholder theory, and the corporate objective function. *Journal of applied corporate finance, 14*(3), 8-21.

Jones, J., & Hunter, D. (1995). Consensus methods for medical and health services research. *BMJ: British Medical Journal, 311*(7001), 376.

Jones, M., & Alony, I. (2011). Guiding the use of Grounded Theory in Doctoral studies–an example from the Australian film industry.

Kainuma, Y., & Tawara, N. (2006). A multiple attribute utility theory approach to lean and green supply chain management. *International Journal of Production Economics, 101*(1), 99-108.

Kaplan, R. S., & Norton, D. P. (2004). *Strategy maps: Converting intangible assets into tangible outcomes*: Harvard Business Press.

Kato, H., Murugan, A., & Armitage, L. (2010). Performance and perceptions of green buildings. *Institute of Sustainable Development and Architecture, Bond University in association with Green Building Council of Australia.*

Kats, G. (2003). The Costs and Financial Benefits of Green Buildings. A Report to California's Sustainable Building Task Force.

Keijzers, G. (2005). *Business, government and sustainable development* (Vol. 28): Psychology Press.

Kennedy's. (2012). New Energex Headquarters. Retrieved January 7, 2015 from: http://www.kennedystimbers.com.au/project/new-energex-headquarters/

Kennett, S. (2009). BREEAM and LEED to work together on new global standard. *Building UK*.

Keown, A. J., Martin, J. D., Petty, J. W., & Scott, D. F. (2011). *Financial management: Principles and applications*: Prentice Hall.

Khalil, N., & Husin, H. N. (2009). Post occupancy evaluation towards indoor environment improvement in Malaysia's office buildings. *Journal of sustainable development, 2*(1).

Khan, S., & Anjum, M. A. (2013). Role of leadership style and its impact on getting competitive advantage. *European Journal of Applied Sciences, 5*(2), 53-61.

Kibert, C. J. (2012). *Sustainable Construction: Green Building Design and Delivery: Green Building Design and Delivery*: John Wiley & Sons.

Kimiagari, S., Keivanpour, S., Mohiuddin, M., & Van Horne, C. (2013). The Cooperation Complexity Rainbow: Challenges of Stakeholder Involvement in Managing Multinational Firms. *International Journal of Business and Management, 8*(22), p50.

Kincaid, D. (2000). Adaptability potentials for buildings and infrastructure in sustainable cities. *Facilities, 18*(3/4), 155-161.

Kincaid, J. W. (2003). *Customer relationship management: getting it right!* : Prentice Hall Professional.

Kintrea, K. (2007). Housing aspirations and obsolescence: understanding the relationship. *Journal of Housing and the Built Environment, 22*(4), 321-338.

Kitzinger, J. (1995). Qualitative research. Introducing focus groups. *BMJ: British Medical Journal, 311*(7000), 299.

Kliem, R. L. (2011). *Managing Projects in Trouble: Achieving Turnaround and Success*: CRC Press.

Kothari, C. (2004). *Research methodology: Methods and techniques*: New Age International.

Kotler, P., & Armstrong, G. (2008). Principle of Marketing [M]: Pearson Prentice Hall.

Kotler, P., & Keller, K.L. (2011). *Marketing management*. Prentice Hall

Krajnc, D., & Glavič, P. (2005). A model for integrated assessment of sustainable development. *Resources, Conservation and Recycling, 43*(2), 189-208.

Krarti, M. (2010). *Energy audit of building systems: an engineering approach*: CRC press.

Krippendorff, K. (2012). *Content analysis: An introduction to its methodology*: Sage.

Krueger, R. A. (1997). *Analyzing and reporting focus group results* (Vol. 6): Sage publications.

Kumar, V. (2008). *Customer lifetime value: the path to profitability*: Now Publishers Inc.

Kumar, V., & Shah, D. (2015).Handbook of research on customer equity in marketing.Cheltenham, UK: Edward Elgar Publishing Limited.

Laboy-Nieves, E. N., Schaffner, F. C., Abdelhadi, A., & Goosen, M. F. (2008). *Environmental management, sustainable development and human health*: CRC Press.

Labuschagne, C., Brent, A. C., & Van Erck, R. P. (2005). Assessing the sustainability performances of industries. *Journal of cleaner production, 13*(4), 373-385.

LaGro, J. A. (2001). *Site analysis: linking program and concept in land planning and design*: John Wiley & Sons.

Lai, T.k. (2011). How Does Information and Communication Technology Affect Workplace Organization? *Available at SSRN 1703121*.

Land Partners. (2015). *Our partners*. Retrieved January 7, 2015 from: http://www.landpartners.com.au/our-projects/item/91-energex-headquarters

Lang, J., & Meghraj, L. (2008). Cost efficiency of green buildings in India. Greenomics.

Langfeldt, L. (2002). Decision-making in expert panels evaluating research. *Constraints, processes and bias. NIFU Rapport, 6*, 2002.

Langston, C. (2011). Estimating the useful life of buildings.

Langston, C. (2014). Measuring Good Architecture: Long life, loose fit, low energy. *European Journal of Sustainable Development, 3*(4), 163-174.

Langston, C., & Lauge-Kristensen, R. (2013). *Strategic management of built facilities*: Routledge.

Laplume, A. O., Sonpar, K., & Litz, R. A. (2008). Stakeholder theory: Reviewing a theory that moves us. *Journal of management, 34*(6), 1152-1189.

Leal Filho, W., Brandli, L., Kuznetsova, O., & do Paço, A. M. F. (2014). *Integrative Approaches to Sustainable Development at University Level: Making the Links*: Springer.

Lee, M. D. P. (2008). A review of the theories of corporate social responsibility: Its evolutionary path and the road ahead. *International journal of management reviews, 10*(1), 53-73.

Lee, W., & Burnett, J. (2008). Benchmarking energy use assessment of HK-BEAM, BREEAM and LEED. *Building and environment, 43*(11), 1882-1891.

Lemon, K. N., White, T. B., & Winer, R. S. (2002). Dynamic customer relationship management: Incorporating future considerations into the service retention decision. *Journal of Marketing, 66*(1), 1-14.

Leydesdorff, L. (2006). *The knowledge-based economy: Modeled, measured, simulated*: Universal-Publishers.

Li, M. L., & Green, R. D. (2011). A mediating influence on customer loyalty: The role of perceived value. *Journal of Management and Marketing Research, 7*(1), 1-12.

Liamputtong, P. (2011). *Focus group methodology: Principle and practice*: Sage Publications.

Lim, S. K., & Yang, J. (2006). *Understanding the need of project stakeholders for improving sustainability outcomes in infrastructure projects.* Paper presented at the Proceedings of the Performance and Knowledge Management Joint CIB Conference.

Lober, H. (2011). *Corporate Social Responsibility and Customer Integration-: An Empirical Investigation of Different CSR-Activities and their Effects on Customers*: Diplomarbeiten Agentur.

Lyon, T. P., & Maxwell, J. W. (2004). *Corporate environmentalism and public policy*: Cambridge University Press.

Mabler, D., Barker,J., & Scbulz, O. (2009). *Green winners: The performance of sustainability-focused organisations during the financial crisis*. Retrieved April 12, 2015 from: http://www.atkearney.com.au/documents/10192/6972076a-9cdc-4b20-bc3a-d2a4c43c9c21

Mackey, S. (2006). Misuse of the term 'stakeholder'in public relations. *PRism, 4*(1), 1-15.

Magent, C. S., Korkmaz, S., Klotz, L. E., & Riley, D. R. (2009). A design process evaluation method for sustainable buildings. *Architectural engineering and design management, 5*(1-2), 62-74.

Maignan, I., & Ferrell, O. (2004). Corporate social responsibility and marketing: an integrative framework. *Journal of the Academy of Marketing Science, 32*(1), 3-19.

Mallory-Hill, S., Preiser, W. F., & Watson, C. G. (2012). *Enhancing building performance*: John Wiley & Sons.

Marchettini, N. (2014). *The Sustainable City IX: Urban Regeneration and Sustainability*.

Marr, B. (2009). *Managing and delivering performance*: Routledge.

Martey, E. M. (2014). The Impact of Good Corporate Governance Practices on Stakeholder's Satisfaction in Ghanaian Listed Companies. *Journal of Educational Policy and Entrepreneurial Research, 1*(2), 41-48.

Mathieu, J., Maynard, M. T., Rapp, T., & Gilson, L. (2008). Team effectiveness 1997-2007: A review of recent advancements and a glimpse into the future. *Journal of management, 34*(3), 410-476.

Maurer, M. (2007). *Corporate stakeholder responsiveness: an evolutionary and learning approach* (Vol. 7): Haupt Verlag AG.

McManus, D. (2014). *Energex headquarters, Newstead River Park, Brisbane, Australia*. Retrieved January 7, 2015 from: http://www.e-architect.co.uk/brisbane/energex-headquarters

McNulty, J. (2006). Business influence over environmental policy and regulation is targeted, says author of new book. University of California Newscentre. Retrieved Jun 15, 2015 from: http://news.ucsc.edu/2006/09/949.html

Meyerson, G., & Dewettinck, B. (2012). Effect of Empowerment on Employees Performance. *Advanced Research in Economic and Management Sciences, 2*, 40-46.

Miles, J. A. (2012). *Management and organization theory: a Jossey-Bass reader* (Vol. 9): John Wiley & Sons.

Miles, M., & Huberman, A.M. (1994). *Qualitative Data Analysis*. Thousand Oaks, CA: Sage Publications.

Milne, C. (2013). Australia's donation law fails to stand up to big business influence. The guardian. Retrieved June 13, 2015 from: http://www.theguardian.com/commentisfree/2013/may/29/australia-political-party-funding-greens

Milne, M. J., Ball, A., & Gray, R. (2005). *From soothing palliatives and towards ecological literacy: A critique of the Triple Bottom Line*. Paper presented at the International Sustainability Conference, 13 -14 October, University of Basel, Switzerland

Minerals Council of Australia. (2005). Enduring value: The Australian minerals industry framework for sustainable development. *Kingston ACT*.

Minichiello, V., Aroni, R., Timewell, E., & Alexander, L. (1990). *In-Depth Interviewing: Researching People*. Hong Kong: Longman Cheshire.

Mitchell, L. M. (2010). Green Star and NABERS: learning from the Australian experience with green building rating tools. *Energy efficient cities: assessment tools and benchmarking practices*, 93-124.

Molloy, S. (2007). Brisbane's new billion dollar address. Retrieved January 7, 2015 from: http://www.skyscraperlife.com/queensland-main-forum/6977-u-c-%BB-newstead-river-park-urban-renewal-32f-mixed-use-%5Bfkp-mirvac%5D

Morgan, D. L. (1997). *Focus groups as qualitative research* (Vol. 16): Sage.

Moultrie, C. (2010). Architectural Design Principles and Processes for Sustainability. Unpublished Masters of Research Dissertation. University of Strathcyde Glasgow

Moy, L. (2008). *A methodology update on focus groups, expert panels, and other small group methods*. Portland: US Government Accountability Office.

Mullerat, R. (2010). *International corporate social responsibility: the role of corporations in the economic order of the 21st century*: Kluwer Law International.

Murphy, F. (2012). *Community Engagement, Organization, and Development for Public Health Practice*: Springer Publishing Company.

Murray, G. (2011). *Stirling Prize analysis: long life, loose fit, low energy*, Retrieved June 7, 2015 from: http://www.e-architect.co.uk/articles/persistence-of-the-absurd

Mutafelija, B., & Stromberg, H. (2008). *Process Improvement with CMMI® v1. 2 and ISO Standards*: CRC Press.

Myers, G., Reed, R., & Robinson, J. (2008). Sustainable property–the future of the New Zealand Market. *Pacific rim property research journal, 14*(3), 298-321.

NABERS. (2015). *Built on performance*. NABERS National Australian Built Environment Rating System. Retrieved January 7, 2015 from: http://www.nabers.gov.au/public/WebPages/Home.aspx

Neely, A. (2007). *Business Performance Measurement: unifying theory and integrating practice*: Cambridge University Press.

Newport, D., Chesnes, T., & Lindner, A. (2003). The "environmental sustainability" problem: ensuring that sustainability stands on three legs. *International Journal of Sustainability in Higher Education, 4*(4), 357-363.

Nordman, C. (2004). *Understanding Customer Loyalty and Disloyalty The Effect of Loyalty-Supporting and-Repressing Factors (sold out,'print on demand'60€)*: Svenska handelshögskolan.

Norman, W., & MacDonald, C. (2004). Getting to the bottom of "triple bottom line". *Business Ethics Quarterly, 14*(02), 243-262.

Northouse, P. G. (2004). *Leadership: Theory and practice*. 3rd ed. Thousand Oaks, CA: Sage

Nwanji, T., & Howell, K. (2004). The Stakeholder Theory in the Modern Global Business Environment'. *International Journal of Applied Institutional Governance, 1*(1), 1-12.

Odds, G. (2011). A Critique of Radar Charts. Retrieved October 17, 2015 from: http://blog.scottlogic.com/2011/09/23/a-critique-of-radar-charts.html

OECD, I. (2004). OECD principles of corporate governance. *Competition in*.

Okoye, P. V. C., Egbunike, F. C., & Meduoye, O. M. (2013). Sustainability Reporting: a paradigm for stakeholder conflict management. *International Business Research, 6*(5), p157.

Oladiran, O. (2013). A Post Occupancy Evaluation Of Students'hostels Accommodation. *Journal of Building Performance, 4*(1).

O'Mara, M., & Bates, S. (2012). Why invest in high-performance green buildings?.White Paper.Schneider Electric. Retrieved March 11, 2015 from: http://www2.schneider-electric.com/documents/support/white-papers/buildings/Why-Invest-in-High-Performance-Green-Buildings.pdf

Onwuegbuzie, A. J., Dickinson, W. B., Leech, N. L., & Zoran, A. G. (2009). A qualitative framework for collecting and analyzing data in focus group research. *International Journal of Qualitative Methods, 8*(3), 1-21.

Pangarkar, N. (2011). *High Performance Companies: Successful Strategies from the World's Top Achievers*: John Wiley & Sons.

Paris, M. (2013). *Energy industry letter suggested environmental law changes*. Greenpeace says oil and gas companies got what they wanted from Ottawa' CBC news. Retrieved May 15, 2015 from: http://www.cbc.ca/news/politics/energy-industry-letter-suggested-environmental-law-changes-1.1346258

Patton, M. Q. (2002). Designing qualitative studies. *Qualitative research and evaluation methods, 3*, 230-246.

Patton, M. Q. (2005). *Qualitative research*: Wiley Online Library.

Perrin T. (2003). Working today: *Understanding what drives employee engagement the 2003 towers perrin talent report U.S report*. Retrieved October 7, 2015 from: http://www.towersperrin.com/tp/getwebcachedoc? Webc = HRS /USA/2003/200309/Talent_2003.pdf

Phillips, R. (2003). *Stakeholder theory and organizational ethics*: Berrett-Koehler Publishers.

Pinder, J., & Wilkinson, S. (2000). Measuring the gap: a user based study of building obsolescence in office property. *The Cutting Edge*.

Popa, B. M. (2012). The relationship between leadership effectiveness and organizational performance. *Journal of Defense Resources Management (JoDRM)*(01), 123-127.

Pradeep, D. D., & Prabhu, N. (2011). The relationship between effective leadership and employee performance. *Journal of Advancements in Information Technology, 20*, 198-207.

Prasad, B. D. (2008). Content analysis: A method in social science research. *Research Methods for Social Work (DK Lal Das, and V. Bhaskaran, Eds.). New Delhi: Rawat*, 173-193.

Preiser, W. (2013). *Building evaluation*: Springer Science & Business Media.

Preiser, W. F., White, E., & Rabinowitz, H. (2015). *Post-Occupancy Evaluation (Routledge Revivals)*: Routledge.

Preiser, W., & Vischer, J. (2006). *Assessing building performance*: Routledge.

Preiser, W.F.E. (2002). *Toward universal design evaluation*. 17th Conference International Association for people-environment studies; culture, quality of life and globalization: problems and challenges for the new millennium, Corunna, Spain.

Price, A. (2011). Human resource management. Andover, UK: Cengage Learning EMEA.

Probst, A. (2009). Performance Measurement, Benchmarking & Outcome-Based Budgeting for Wisconsin Local Government: Local Government Center, University of Wisconsin-Extension.

Property Council of Australia. (2008). *New green home for Brisbane's ENERGEX*. Retrieved January 7, 2015 from:http://www.propertyoz.com.au/Article/NewsDetail.aspx?id=677

Quaddus, M. A., & Siddique, M. A. B. (2011). *Handbook of corporate sustainability: frameworks, strategies and tools*: Edward Elgar Publishing.

Rabiee, F. (2004). Focus-group interview and data analysis. *Proceedings of the nutrition society, 63*(04), 655-660.

Rahim, S. (2009). Can green buildings pass payback tests? *The New York Time, 27*.

RAI. (2014). Customer Loyalty: concept, context and character. New Delhi, IN: McGraw Hill Education India Private Limited.

RAIA (Royal Australian Institute of Architects). (2001). *Sustainable design strategies*. Retrieved April 17, 2015 from:

http://www.architecture.com.au/docs/default-source/edg/sustainable-design-strategies-for-architects.pdf?sfvrsn=0

Rajasekar, S., Philominathan, P., & Chinnathambi, V. (2013). Research methodology. *arXiv preprint physics/0601009*.

Rashid, R., Ahmad, M. H., & Khan, M. S. (2011). The Green Building Design Principle and Practice Model for Bangladesh. *Int. J. of Thermal & Environmental Engineering, 2*(2), 99-102.

RCP. (2013). Leadership in Project Management. *Newstead Riverpark Redevelopment.* Brisbane Retrieved January 22, 2015 from: http://rcp.net.au/services/development-management/case-studies-dm/newstead-riverpark-redevelopment/

Reed, M. S., Graves, A., Dandy, N., Posthumus, H., Hubacek, K., Morris, J., et al. (2009). Who's in and why? A typology of stakeholder analysis methods for natural resource management. *Journal of Environmental Management, 90*(5), 1933-1949.

Reed, R., Bilos, A., Wilkinson, S., & Schulte, K.-W. (2009). International comparison of sustainable rating tools. *Journal of Sustainable Real Estate, 1*(1), 1-22.

Rego, A., & e Cunha, M. P. (2008). Authentizotic climates and employee happiness: Pathways to individual performance? *Journal of Business Research, 61*(7), 739-752.

Reichheld, F. F., & Teal, T. (2001). *The loyalty effect: The hidden force behind growth, profits, and lasting value*: Harvard Business Press.

Renner, J., & Cross, J. (2008). Community Engagement for Sustainability: An Invitation and a Challenge to All Universities.

ReVelle, J. B. (2001). *Manufacturing handbook of best practices: An innovation, productivity, and quality focus*: CRC Press.

Reymond, P., Strande, L., Ronteltap, M., & Brdjanovic, D. (2014). Stakeholder Analysis. *Faecal Sludge Management: Systems Approach for Implementation and Operation*, 319-340.

Robinson, D., Perryman, S., & Hayday, S. (2004). The drivers of employee engagement. *Report-Institute for Employment Studies*.

Robson, C. (2002). *Real world research*. 2nd ed. Oxford: Blackwell

Roderick, Y., McEwan, D., Wheatley, C., & Alonso, C. (2009). *A comparative study of building energy performance assessment between LEED, BREEAM and Green Star schemes*, IBPSA Building Stimualtion. Eleventh International IBPSA Conference: Integrated Environmental Solutions Limited, p.5-6

Rogers, K., & Hudson, B. (2011). The triple bottom line: The synergies of transformative perceptions and practices of sustainability. *OD practitioner, 4*(43), 3-9.

Rohrich, M. (2007). *Fundamentals of investment appraisal: an illustration based on a case study*: Oldenbourg Verlag.

Roosa, S. A. (2010). *Sustainable development handbook*: The Fairmont Press, Inc.

Roper, K. O., & Beard, J. L. (2006). Justifying sustainable buildings-championing green operations. *Journal of Corporate Real Estate, 8*(2), 91-103.

Ross, D.F. (2015). *Distribution planning and control: Managing in the Era of supply chain management*. Springer

Sabol, L. (2008). Measuring Sustainability for Existing Buildings, IFMA World Workplace, November 2008

Sadowski, M. (2012). What is the value of corporate sustainability ratings? The Guardian. Retrieved March 3, 2015 from:http://www.theguardian.com/sustainable-business/blog/value-corporate-sustainability-ratings-rankings

Sagoe, D. (2012). Precincts and prospects in the use of focus groups in social and behavioral science research. *The Qualitative Report, 17*(15), 1-16.

Saunders, M., Thornhill, A., & Lewis, P. (2009). *Research methods for business students*. Financial London: Pearson.

Savitz, A. (2012). *The triple bottom line: How today's best-run companies are achieving economic, social and environmental success--and how you can too*: John Wiley & Sons.

Savitz, A., & Weber, K. (2006). *The triple bottom line: How today's best-run organisations are achieving economic, social and environmental success - and how you can too*. San Francisco: Jossey Bass.

Schilling, J. (2006). On the pragmatics of qualitative assessment: Designing the process for content analysis. *European Journal of Psychological Assessment*, 22(1), 28-37.

Schlange, L. E. (2006). Stakeholder identification in sustainability entrepreneurship. *Greener Management International, 2006*(55), 13-32.

Schmeer, K. (1999). Stakeholder analysis guidelines. *Policy toolkit for strengthening health sector reform*, 1-33.

Schneider Electric. (2006). Sustainable solutions: The impact of the green building movement. White Paper, USA. Retrieved July 23, 2014 from: http://www.schneider-electric.com.au/documents/buildings/sustainable_solutions_white_paper.pdf.

Schwede, D. A., Davies, H., & Purdey, B. (2008). Occupant satisfaction with workplace design in new and old environments. *Facilities, 26*(7/8), 273-288.

Scott, W.R. (2001). *Institutions and organisations*. 2nd ed. Thousand Oaks, CA: Sage

Sen, S., Bhattacharya, C. B., & Korschun, D. (2006). The role of corporate social responsibility in strengthening multiple stakeholder relationships: A field experiment. *Journal of the Academy of Marketing Science, 34*(2), 158-166.

Seo, S., Tucker, S., Ambrose, M., Mitchell, P., & Wang, C. (2006). Technical evaluation of environmental assessment rating tools. *Research and Development Corporation, Project No. PN05, 1019*.

Seow, C., Hillary, R., & Jamali, D. (2006). Insights into triple bottom line integration from a learning organization perspective. *Business Process Management Journal, 12*(6), 809-821.

Seuring, S. (2013). A review of modeling approaches for sustainable supply chain management. *Decision support systems, 54*(4), 1513-1520.

Seuring, S., & Müller, M. (2008). From a literature review to a conceptual framework for sustainable supply chain management. *Journal of cleaner production, 16*(15), 1699-1710.

Shafie, B., Baghersalimi, S., & Barghi, V. (2013). The relationship between leadership style and employee performance. *Singaporean Journal of Business Economics and Management Studies*.Vol. 2 (5). pp. 21-29.

Sharma, S., & Starik, M. (2004). *Stakeholders, the environment and society*: Edward Elgar Publishing.

Shirazi, C. H. (2009). Data-Informed Calibration and Aggregation of Expert Judgment in a Bayesian Framework.

Siemens. (2010). *Economics of energy upgrades*. Retrieved May 28, 2015 from: http://www.nlc.org/documents/Corporate%20Programs/The-Economics-of-Energy-Upgrades.pdf

Simons, R. (2011). Operations Management: A Modern Approach. Oakville, ON: Apple Academic Press Inc.

Sims, R. R. (2003). *Ethics and corporate social responsibility: Why giants fall*: Greenwood Publishing Group.

Singh, B., Grover. S., & Singh, V. (2012). *A systematic review of literature on benchmarking.* Proceedings of the National Conference on Trends and Advances in Mechanical Engineering, YMCA University of Science & Technology, Faridabad, Haryana, Oct 19-20, 2012

Singh, K. H. (2012). *A conceptual model for proactive detection of potential fraud enterprise systems: exploiting SAP audit trails to detect asset misappropriation.* University of Southern Queensland.

Slaper, T. F., & Hall, T. J. (2011). The triple bottom line: what is it and how does it work. *Indiana Business Review, 86*(1), 4-8.

Smith, A.D. (2010). Growth of corporate social responsibility as a sustainable business strategy in difficult financial times. *International Journal of Sustainable Economy*, 2(1), 59-79.

Smith, D. (2014). *Perspectives on Social Sustainability and Interior Architecture: Life from the Inside*: Springer Science & Business.

Smith, S. L. (2010). *Practical tourism research*: Cabi.

Smith, T., Fischlein, M., Suh, S., & Huelman, P. (2006). A comparison of the LEEDS and Green Globes System in US. The Carpenters Industrial Council

Spangenberg, J. H. (2005). Economic sustainability of the economy: concepts and indicators. *International journal of sustainable development, 8*(1-2), 47-64.

Spitzer, H., & Martinuzzi, A. (2013). Methods and Tools for Corporate Impact Assessment of the Millennium Development Goals (MDGs) and Sustainable Development.

Sridhar, K. (2012). Corporate conceptions of triple bottom line reporting: an empirical analysis into the signs and symbols driving this fashionable framework. *Social Responsibility Journal, 8*(3), 312-326.

Stemler, S. (2001). An overview of content analysis. *Practical assessment, research & evaluation, 7*(17), 137-146.

Steurer, R., Langer, M. E., Konrad, A., & Martinuzzi, A. (2005). Corporations, stakeholders and sustainable development I: A theoretical exploration of business–society relations. *Journal of Business Ethics, 61*(3), 263-281.

Striteska, M., & Spickova, M. (2012). Review and comparison of performance measurement systems. *Journal of Organizational Management Studies, 2012*, 1-14.

Suggett, D., & Goodsir, B. (2002). *Triple bottom line measurement and reporting in Australia: Making it tangible*: Allen Consulting Group.

Symons, C., & Lamberton, G. (2014). Building a social case for business sustainability. *Journal of Economic & Social Policy, 16*(2), 186.

Szekely, F., & Dossa, Z. (2014). A Stakeholder-Driven Approach to Measuring Sustainability. Shifting sustainability performance measurement from the firm to stakeholders, IMD.

Taticchi, P., Carbone, P., & Albino, V. (2013). Corporate sustainability.Heidelberg, G: Springer-Verlag Berlin Heidelberg.

TCC (Turner Construction Company). (2012). *Green Building Market Barometer*. Retrieved June 2, 2015 from: https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&cad=rja&uact=8&ved=0CCQQFjAB&url=http%3A%2F%2Fwww.turnerconstruction.com%2Fdownloaddocument%2Fturner2012greenbuildingmarketbarometer.pdf&ei=MdhrVfmcA8zbUZr_gPAP&usg=AFQjCNHvh2zt4zUBKE-

fy408mhCGrbwiPQ&sig2=cJUhn1GaVvGudHaXRPw3tQ&bvm=bv.94455598,d.d24

The Economist. (2009). *Triple bottom line*. Retrieved January 10, 2013 from: http://www.economist.com/node/14301663

The Mindful Word. (2012). WHY BUILD GREEN?: Payback is a lot quicker than most people think. Retrieved May 25, 2015 from: http://www.themindfulword.org/2012/build-green-payback/

Thomas, T., Schermerhorn, J. R., & Dienhart, J. W. (2004). Strategic leadership of ethical behavior in business. *The Academy of Management Executive, 18*(2), 56-66.

Toth, B., Fernando, R., Salim, F., Drogemuller, R., Burry, J., Burry, M., et al. (2009). Modelling sustainable and optimal solutions for building services integration in early architectural design: confronting the software and professional interoperability deficit. *Proceedings off Cumulus 38 Degrees South, Hemispheric Shifts Across Learning, Teaching and Research*.

Trochim, W., Donnelly, J., & Arora, K. (2015). *Research methods: The essential knowledge base*: Cengage Learning.

Tschopp, D. (2003). It's time for triple bottom line reporting. *The CPA Journal, 73*(12), 11.

Tsoutsoura, M. (2004). Corporate social responsibility and financial performance. *center for responsible business*.

UKGBC. (2008). UK Green Building Council Consultation: Code for Sustainable Buildings Task Group. London.

UNEP. (2006). Sustainable Buildings and Construction Initiative: Information Note, United Nations Environmental Programme UNEP. Retrieved September 21, 2014 from: http://www.uneptie.org/shared/uploads/events/docs/462_01.pdf

Ungan, M. (2004). Factors affecting the adoption of manufacturing best practices. *Benchmarking: An International Journal, 11*(5), 504-520.

Urban, W., & Mazurek, A. (2011). The human factor in 5S implementation: perspectives from Poland. *Emerald Emerging Markets Case Studies Collection*. Retrieved April 17, 2013 from: http://www.emeraldinsight.com/case_studies.htm?issn=2045-0621&articleid=1943190&show=abstract

Urbecon. (2008). Building green: financial costs and benefits. Sydney, AU: SGS Economics and Planning Pty Ltd. [pdf].

Van Vuuren, T., Roberts-Lombard, M., & Van Tonder, E. (2013). Customer satisfaction, trust and commitment as predictors of customer loyalty within an optometric practice environment. *Southern African Business Review, 16*(3), 81-96.

Ventresca, M. J., & Mohr, J. W. (2002). Archival research methods. *The Blackwell companion to organizations*, 805-828.

Vischer, J. (2001). Post-Occupancy Evaluation: a multifaceted tool for building improvement. *Learning from out buildings: a state-of-the-pracfice summary of post-occupancy evaluafion*, 23-34.

Vischer, J. C. (2005). Space meets status. *Abingdon: Routledge*.

Vischer, J. C. (2008). Towards an environmental psychology of workspace: how people are affected by environments for work. *Architectural Science Review, 51*(2), 97-108.

Volker, L. (2010). *Deciding about design quality: Value judgements and decision making in the selection of architects by public clients under European tendering regulations*: Sidestone Press.

Von Tulder, R., van Tilburg, R., Francken, M., & da Rosa, A. (2014). Managing the Transition to a Sustainable Enterprise: Lessons from Frontrunner.

Vuksic, V.B. (2011). Change Management as a Critical Success Factor (CSF) of Business Process Management (BPM) Projects, *Presentation on Doctoral Seminar in Information Management*, FELU, Ljubljana

Wang, H., Law, K. S., Hackett, R. D., Wang, D., & Chen, Z. X. (2005). Leader-member exchange as a mediator of the relationship between transformational leadership and followers' performance and organizational citizenship behavior. *Academy of management Journal, 48*(3), 420-432.

Warnock, C. (2007). Bringing Existing Buildings into the Sustainability Equation. *Change, 25*, 4.

Washington Post. (2008).*Opinion leaders: the circle of influence*. Retrieved June 19, 2015 from: http://www.washingtonpost.com/wpadv/media_kit/wp/pdf/OpinionLeaderBook_MediaKit.pdf

Weber, B., & Rahe, M. (2010). Wealth Creation and Rural-Urban Linkages: An Exploratory Study of Economic Flows in Two Natural Resource-Rich Regions. *Wealth Creation in Rural Communities*.

Weerasinghe, U. (2012). *Development of a Framework to Assess Sustainability of Building Projects*(PhD thesis) University of Calgary.Calgary, Alberta.

Wells, G. (2013). *Sustainable business: theory and practice of business under sustainability principles*: Edward Elgar Publishing.

Wengraf, T. (2001). *Qualitative research interviewing: Biographic narrative and semi-structured methods*: Sage.

Werther Jr, W. B., & Chandler, D. (2010). *Strategic corporate social responsibility: Stakeholders in a global environment*: Sage Publications.

White, A. L. (2012). Redefining value: The future of corporate sustainability ratings.

Whyte, J., & Gann, D. (2003). Design Quality Indicators: work in progress. *Building Research & Information, 31*(5), 387-398.

Wilburn, M. (2007). *Managing the customer experience: A measurement-based approach*: ASQ Quality Press.

Wilding, R., Wagner, B., Ashby, A., Leat, M., & Hudson-Smith, M. (2012). Making connections: a review of supply chain management and sustainability literature. *Supply Chain Management: An International Journal, 17*(5), 497-516.

Wilhelm, K. (2013). *Making Sustainability Stick: The Blueprint for Successful Implementation*: Pearson Education.

Wilkinson, S., Reed, R., & Cadman, D. (2008). *Property development*: Routledge London.

Wong, L. (2008). Data analysis in qualitative research: A brief guide to using NVivo. *Malaysian Family Physician: the Official Journal of the Academy of Family Physicians of Malaysia, 3*(1), 14.

World Interiors Directory. (2011). Project in detail. Retrieved January 7, 2015 from: http://www.worldinteriorsdirectory.com/project.cfm?id=10081

Wright, P.M., Gardner, T.M., Moynihan, L.M., & Allen, M.R. (2005). The relationship between HR practices and firm performance: Examining causal order. *Personnel Psychology*, 58, pp. 409- 446.

Xu, J. (2005). *Market research handbook: measurement, approach and practice*: iUniverse.

Yan, W., Chen, C., & Chang, W. (2009). An investigation into sustainable product constructualization using a design knowledge hierarchy and Hopfield network. *Computer and Industrial Engineering, 56*(4), 617-626.

Yin, R. K. (2009). *Case study research. design and methods*. 4th ed. California, Sage Publications.

Yin, R. K. (2013). *Case study research: Design and methods*: Sage publications.

Yudelson, J. (2010). *Greening existing buildings*: McGraw-Hill New York.

Zadek, S. (2001). *The civil corporation. The New Economy of Corporate Citizenship.* London: Earthscan.

Zimmerman, A. S., & Blythe, J. (2013). *Business to business marketing management: a global perspective*: Cengage Learning EMEA.

Zimmerman, A., & Martin, M. (2001). Post-occupancy evaluation: benefits and barriers. *Building Research & Information, 29*(2), 168-174.

Zimring, C. (2002). Post-Occupancy Evaluations and Organizational Learning1. *Learning from Our Buildings: A State-of-the-Practice Summary of Post-Occupancy Evaluation, 145*, 42.

Zu, L. (2008). *Corporate Social Responsibility, Corporate Restructuring and Firm's Performance*: Springer.

APPENDIX 1:

Mike Power Interview Transcript

Interviewer: I'll take your permission to record this stuff?

Mike: Yes, no problems.

Interviewer: Okay. Thank you.

Mike: Okay, so the first question you've got here is “Why use a six star model for the Energex building?”

Interviewer: Yeah, that's right.

Mike: Our initial target was actually a five star building with a 4.5 ABGR rating as well and when we went out to tender for someone to supply this building – to build it and provide it to us, ‘cause we don't own the building, we leased it but we committed to the lease upfront which, I guess, funded their development. The developer that came back to us, that was shortlisted, we negotiated with as the preferred model. Obviously when you're going through tenders you play your cards close to your chest. They were unaware they were the lead bid and to secure the deal they agreed to up the outcome from a five star Green Star proposal to a six star Green Star proposal at no extra cost to Energex. So, no additional rent. Why did they do that?

Interviewer: Why did they?

Mike: My understanding is they knew they could lever off that development to other parties to prove that they could build that building and build buildings similar to that, to achieve six star Green Star. They wanted their reputation enhanced to say that this company has built Queensland's first six star Green Star building and at the end of the day they knew they could find ways to achieve the sixth star without spending a lot of money on parts of the building that had a very long payback. So they targetted the big things that save a lot of energy and deliver some of the Green Star outcomes, so active chilled-beam air conditioning, for instance. That didn't mean a lot more upfront compared to a traditional air conditioning system but it achieved better fresh air handling rates, lower energy use, all of those sorts of things that mean they could get to the sixth star without a lot more investment. So they weren't really out of pocket that extra percentage that we currently saved. We had already assessed before we went through getting approval from our board how much extra rent this was likely to drive a four star/five star/six star outcome - I can share that with you later on about what extra capital costs that would be to a developer and therefore how much more rent we would pay, which is why we were originally targetting five star because we thought, that's a reasonable additional amount of rent that we could justify, but when six star was offered for the cost of five, why would you knock it back?

Interviewer: Thanks for that. That's really interesting. But it wasn't the question that we were asking (laughs). It's really about the six criteria that you've called on your video on your website a six star approach. So it's looking at that wider view.

Interviewer: Why did they call it that?

Mike: Why did we want to do that?

Interviewer: Yeah, the decision.

Mike: The decision was made at a time when Energex was both a distributor and a retailer of electricity, so we had genuine external customers. Energex had - every man and woman out there in business who has an electricity meter was a customer of Energex and therefore there was a benefit in Energex leading by example that we were prudent with the use of electricity, that we were focused on reducing our costs, and so...

Interviewer: A good corporate citizen.

Mike: A good corporate citizen and that was something that we could then talk about in the community that we were leading by example, why isn't everyone else trying to do the same thing. From a community perspective, we were looking to make sure that we looked like a good corporate citizen but for business reasons as well it was more efficient and it gave us other less tangible benefits such as staff satisfaction and that sort of thing. So, from a government point of view, really the driver there was they had no real interest in what rating our building was except that it needed to be a minimum of 4.5, I think it was, Green Star, and that's because the government had a policy at that time that every state department and agency had to have a building that achieved those ratings if they were going to lease it. So, we had a black and white imperative from government: "You need to make sure that you achieve that." How we achieved it, whether it was through a range of water recycling, energy efficient lights, all the rest of it or whether it was through where we located the building - close to public transport and we got better points for those sort of things, the government didn't really care except you needed to achieve a minimum rating. So we obviously took that as one of the reasons why we went for not being in the CBD. [It was] easier in a campus-style buildings to get better ratings, back then anyway, from a Green Star point of view, at really no extra cost, so we could justify the move out of the CBD. For our customers, as I explained just a minute ago, our customers were every man and woman that pays electricity in Queensland at that point in time and this was demonstrating to them that we were prudent in reducing our costs. Electricity costs at that stage were only going up by a bit more than CPI and more recently, as you know, they've been going up double digits and that's because of investment in the network but we wanted to be able to demonstrate that we're doing our bit reducing our energy costs and being more sustainable as well from a green point of view. In our staff, our criteria... Sorry?

Interviewer: No. 2, now.

Mike: No. 2- sorry, you want to know about the government?

Interviewer: He explain it...

Mike: Yes, I'm sort of going through all that...

Interviewer: I already know the answer because you told me at lunch. Do you think all six criteria...

Mike: Are equally important.

Interviewer: To customers - are equally important?

Mike: Well... Me personally, I think they're not all equally important. From the business approach to our decision, certainly the company line was more important - that's about savings - what was best for the company. Staff, we certainly consulted with them and they were a big part of the decision-making. The environment - I'll run through these in order. The community had a minor consideration but it certainly influenced the outcome. Government had a black and white position for us, so it influenced the decision but wasn't the key driver. Customers, minor criteria in terms of assessing which was the best way to go. Staff, that was a reasonable factor. It might have been 20 per cent of the decision-making but it was linked to things about access to transport and those sorts of things. The company was the single biggest thing and that was about saving costs, consolidating our operations out of five buildings into one, those sorts of things. So the business efficiencies that would come with the move to commit to a new building in a new location that had a Green Star rating that was favourable. Environment, again, that was linked back to commercial outcomes, so reduced water, energy consumption translated to reduced outgoings, so reduced cost operates. Does that hopefully address your question? I started to go through these. Do you want me to go back through to Question 3, do you want me to go back through them?

Interviewer: Just briefly.

Mike: So Question 3, which is “What does each criteria mean to you?” From a community point of view, as I said it's corporate reputation. From the government, it was a mandate that we had to achieve a certain rating for our building. Customers, it's about leading by example, demonstrating that we were a good corporate citizen and that we were reducing our costs to them, so our component of the electricity bill was between 40 and 50 per cent of the total bill you get and the rest of it's the generator's costs and the transmission authority's cost. We're the other part of it and we wanted to make sure that we could reduce our costs in our

part of the stack, so that was part of the decision. Staff, it was about how do we minimise the impact on staff as we make this decision as opposed to how do we make staff happy. It was - we have to make this decision because it's much more affordable to go out and live in this sort of building but how do we bring staff along for that and how do we minimise the impact? And hopefully improve the situation for staff. So there certainly was a desire to improve for staff but certain things are out of your control and that's issues outside of the building, so public transport access and things such as that. The company, we already touched on that. It was about can we reduce costs and by how much. And then the environment, again, we reported at that stage quarterly to our shareholders, who are the two senior government ministers, and that was on the consumption of water, energy, those sorts of things, so it was about trying to achieve our reduction targets that we had in place. They weren't all equally rated, as we've covered, but they all played a role in the decision-making. So Question 4, “How do you know if the above were successfully achieved?” Well, from a community point of view, good corporate citizen outcomes. A bit of a double-edged sword there. Certainly we got a lot of accolades early on. The building was nominated for building of the year and got highly commended - I don't think we won. We were the first as designed six star Green Star building but we weren't the first as built, because by the time we were [unclear] to completion, Green Square by Brisbane City Council had been completed, so they beat us to the line in terms of the first as built six star Green Star. But we certainly have lived off the benefits of doing the right thing by the environment with the community and it's certainly been picked up at a number of forums and recognised and is still recognised today with groups of people wanting to have a look at what we've achieved there.

Interviewer: So, media attention and things like that.

Mike: There's been media articles. We've certainly had presentations, numerous presentations at forums related to buildings and property, Facilities Management Association of Australia, the Property Council, CoreNet, other parties that may want to move and do something similar like Bank of Queensland who are now moving down to the region that we've moved into. We've greatly assisted them in their decision by openly and willing sharing our learnings with our whole decision-making and then our subsequent actions after we got there and we're happy to share with others as well. So, from a community point of view, I think we can say

that we have safely achieved our objectives. From a government point of view, it was a black and white one. We achieved that - we got the building that rated what they wanted us to rate and we were able to report on that and that criteria's been closed off on. Customers, did we reduce our costs to the customer? We did, so and this is high level but we did a business case obviously before we make a decision such as this. If we had elected to stay in the CBD spread across a number of buildings or even consolidate into a new building in the CBD, the rental difference over the first 15-year lease term compared to moving out to Newstead into a campus-style Green Star building was in excess of $100 million a year - $100 million over the 15 years. That's $100 million more that would've been passed through to the electricity customers if we had stayed in the CBD and had a new building committed to us or even had just stayed in the existing buildings and they'd all moved up to market rents over time. So, we ticked the box in terms of that, and that's before we start to take into account savings in energy and water, and we've demonstrated 30-50 per cent decreases in both of those commodities over the last couple of years so I'd be happy to put my hand on my heart and say we've achieved our customer aims there. Staff, question mark out about that. Are staff happy with the building? No doubt. They love the building. Are they happy with the overall decision which includes where the building is, big question mark. I would say it's 50-50 still. 50 per cent of staff like it, they've grown and adapted to where the building is located but a number of staff that had been with the business for a long long time and were used to being in the CBD still don't appreciate the fact that they're not in the CBD anymore. So, that's beyond our control but the use of facilities, the use of technology, the pleasant environment - natural light, fresh air, all the rest of it, certainly recognised in our post-occupancy survey as better than where they used to be, significantly better, so I'm saying it's probably half a tick but we've got to our objective. The company, that was delivering better business outcomes, we have, both from a financial point of view - I've just mentioned about the rental and outgoing savings - but from a working together as one company. Large companies tend to operate in silos over time. Silos form and this silo doesn't communicate well with that one and often-times they're at logger heads and you've got people that don't talk to each other and parts of the business that are actively undermining each other. We've never measured that but there's certainly a sense that we don't have that anymore. A good example is you can go for a walk in this building and bump into all the people that you don't want to talk to and you're forced to have a conversation because you bumped into them. So an

issue you might not want to have to make a decision on, you don't want to consult on because it's just not quite ready to have that robust conversation, you've really got nowhere to hide on it because you're going to bump into someone every day who, you know, you try to hide from. So it's that forced collaboration that happens, the incidental collaboration that happens because to get to anywhere in that building you've got to walk. The use of lifts is very limited. People use lifts a couple of times a day coming to get to their floor. The rest of the day, largely, they'll use inter-floor travel, the stairs, and you're seeing people all the time. "There's Mary, I've got to catch up with her. That issue I've been trying to catch up with her on for the last two weeks hasn't happened so I'll do that right now 'cause there she is. Mary, you got a minute?" Down the stairs, you have the conversation, you move on. And we have picked that up through our annual staff engagement surveys that we do as well. So we haven't asked the specific question - "Do you think we're working well as one Energex?" - but there's lots of questions that lead to that assessment. We are a much more cohesive business with 1,600 people in one building as opposed to that many people across five buildings and now seeing each other every day whereas previously you might not have seen someone for two weeks or three weeks because they go to the 800-square metre floor on level 15, I go to level 5 and I never see them. There's no visibility. So the open plan campus-style environment does actually help and that delivers then productivity improvements that are beyond the cost savings of the development itself. On the environment side of it, just on the straight consumption data, yes definitely achieved our objectives there. We have achieved our water and energy savings that we said we would so we've ticked that box. Question 6, do we think that the Energex building is successful? Across those criteria, yes. Are there things we could do differently? Yeah, there would be, so I don't know if you want me to run into that or - here we go, next question, No. 7.

Interviewer: Just before we get off that one, are there other things that should be on that list? Is this six criteria still your six key criteria or is there a seventh?

Mike: I think you can wrap everything up into that. I think there's a lot of subsets under each of those which you've got on your matrix there. But whether you break one of them out and make it a stand-alone one is another issue but I think you can cover everything all in those six attributes you've got there, six inputs. Given what we know now, what would we do differently? Not a lot, other than more the way you

structure your construction agreement. So you guys are from an architectural background and you're familiar with design and construct versus detail the building and take that to tender. We went through a design and construct approach because we had a tight time frame and so we didn't have a lot of specific unique requirements for the building except for it to be an office building but after the decision was made to make it, to commit to it, we then subsequently decided to put a couple of specialised parts of our business into that building which meant that we did need some specialised outcomes and objectives delivered by the building that then led to quite a little bit of arm-wrestling with the builder because "That's not part of the brief and that's what I'm engaged to build and that's what I'm building and if you want to change that now that's going to put a delay into the program," and all those sort of things. The procurement vehicle, how you do it, I've certainly questioned whether you'd do that again that way and given more time to have the thing built, we probably wouldn't go design and construct, we'd go the traditional manner, but we really were – we had our backs to the wall in terms of time frame because we would have had to extend a number of the city leases if this wasn't completed on time, so we kind of had to take that choice. What else would we do differently? If a location - if you're in a position to choose a location that was more accessible to the multitude of public transport options, that would be a good thing. We certainly had access to transport as one of the key criteria in our evaluation and in fact it weighted in at somewhere around the 15-20 per cent of the total decision-making. We walked and measured distances from train stations and bus stops and all the rest of it and frequency of travel and made ourselves comfortable enough with the fact that it was only changing it for 20 or 30 per cent of staff who would be worse and for the rest of the staff it would probably be better or at least the same and therefore the majority wins and we're going with it. In hindsight, that's still a big lump of people that are impacted and affected and that still - we're still obviously evidencing that with the post-occupancy survey, where a number of people are still a little unhappy about the fact that they've now got an extra 15 minutes travel in their day that they didn't have before.

Interviewer: You're saying that over time that disappears because the ones that are grumbling retire or move on and the new ones don't have a problem. It's what they've signed up for.

Mike: They live nearby and they sign up for it. They're aware that that's where the building and so they built it into their decision-making about taking the job with Energex but anyone who's been there prior to this decision to move back in 2007 has a legitimate gripe that now they've got to travel further. The good thing is they've still got a job. In one of the presentations I did to the Bank of Queensland, in the early days post the decision to move but before we had moved, we were tracking employee's exit statements about "What are the reasons you're leaving?" Most of them came back to the discussion we were having before, Craig, were around a leader, that's why they were leaving because they didn't respect their leader or didn't get on with them or didn't like the way the business was headed. But three people out of about 50 that left in that period said, "I don't like the fact you're moving to Newstead." Of those three that resigned and went away, two subsequently post the relocation ended up being reemployed with Energex at Newstead. So they made a decision that it wasn't that bad after all and they're back with the business and they're quite happy. So, I think it's that perception that they can't control it and they don't like it, so. 8, how do you validate building performance and report back to the key stakeholders? Well, building performance, we report on our operating costs monthly, so I've got a profit and loss for my group, the property group, and we've got the budget for all things property, so maintenance and operation of the building, be safe incidents on the building, so if there's a trip hazard or there's something that's been reported as dangerous we report on that and we've got response times and all that stuff. Achieving our reductions in energy and water cost, they're locked into my budget so you either achieve your budget and you've achieved your targets or you haven't achieved your budget and you've got to explain why you haven't achieved your budget, so it's fairly simple. Building outages are reported and you know we've got performance criteria for the building site. More than 50 per cent of the building can't be available for more than two hours, I think it is, or something like that during any given year and we've only had that once and it wasn't to do with the building system, it was to do with the glass facade around the atrium that broke.

Interviewer: So that's kind of your answer is more about service delivery and response, isn't it? What we're asking here maybe is according to these six categories...

Mike: According to those?

Interviewer: Do you report back in any way to them in terms of...?

Mike: Not continually, no. Most of these were a once-off, tick the box and then done. Certainly from a community point of view, whether we're still continuing to hit our targets or not, they're not interested. The government's no longer interested in us achieving our targets on that building. Customers probably would be if our costs went up, if we're controlling of our costs and weren't achieving our forecasts in terms of rentals and outgoings but we don't report on that to the broader audiences. Our annual statement doesn't report down to that level of detail, so that's not transparent or available. Staff, we certainly give staff the opportunity to comment on the building performance each year through the staff engagement.

Interviewer: Quite a lot, actually, from what you've told me.

Mike: Yep. The company performance, so, is the building hitting its targets financially? That happens just as I said through my profit and loss statement every month and certainly on the annual performance and environment, we continue to report through an internal group called the environment council. We have a council that has the key senior executives in the business that I go to and we have to report monthly on waste, so how much of our waste goes to recycling as opposed to landfill, how much water we use, how much water is harvested and reused, electricity consumption - all that gets reported and monitored, sort of live metering on all that these days, so it's easy to produce that information.

Interviewer: Presumably, if Energex was targetted by the media or the community generally over something or other they didn't like, you would respond in terms of what you do as a good corporate citizen along these sort of criteria.

Mike: We could, we could.

Interviewer: And you would try to justify the fact of what you do is in support of the community and government stakeholders and customers and staff and...

Mike: That it is in line with those expectations.

Interviewer: You would use it as a vehicle to defend yourself.

Mike: We have, and because we do keep that data, then we are able to do that. Have we been asked to do it? Not through the media, but certainly through new board members. We've had a number of different changes to our board and the board is an independently appointed board of directors from the shareholding ministers. We don't control who sits on the board and they can ask any question at any time about any part of the business. Usually, when they first come and they're appointed as a director, they want to ask some questions around building and property performance like “Why have we got this nice building? Isn't this costing us a lot of money? Couldn't we be doing this cheaper?” So having that data and being able to show those linkages back to achieving these criteria has been handy because it's been able to show them that it's been a good decision and it's actually achieving the objectives that we set out to deliver on.

Interviewer: My next question you've probably already answered but you can keep going as you are.

Mike: Keep going? Case study: why is the Energex building an asset to the company compared to more traditional offices. Well, kind of it's a mingle of everything we've already discussed but one of the things...

Interviewer: Saving money, you said?

Mike: Yeah, but even more so, it's given us the ability to start trialling some alternative workplace strategies that we couldn't have done in our previous accommodation arrangement. The property group is the accountable party for anything that happens in the building in terms of how it operates. We volunteered ourselves as guinea pigs to move on to a no allocated workstation policy. Take one step back. As part of the move to Newstead, the organisation committed to having no offices. So, previously, people at my level had large offices. People the next level down if they were lucky had a small office but the people at the top - the CEO, he had a great office with an ensuite and all the rest of it. The commitment was given when we moved to Newstead that no-one would have an office and as compensation, no monetary increase for the execs who were displaced from their offices but we would have a large number of small quiet rooms where you could quickly retreat to so...

Interviewer: Are you saying the CEO doesn't have an office?

Mike: No, no office.

Interviewer: That's amazing.

Mike: So how does that work? It means that he's got a workstation immediately next door to a quiet room that has his absolute right to bump anyone else out of if he has a phone call that he wants to take discretely or if he wants to go in there and work quietly. I've got the same, so if someone calls me and I don't want to continue that conversation outside, I can just say, “Stay with me a second, I'm just transferring you to the quiet room.” Bang bang, it'll ring in there and if someone's in there, I just tap on the glass and out they go. I'll go in there and then I've got the room. Initially a lot of pushback on that but ultimately people accepted it and the benefit meant that instead of having 50 people with offices in the building - in the business - in the city building, we now had a total of 125 meeting rooms which everyone could use and they were being used more often. So staff often found themselves in a situation where they needed some confidentiality but couldn't get it because the 24 meeting rooms we had in the building had all been booked out. So if you get this left-field call, there's nothing you can do about it, you've got someone shouting at you on the phone, you ark up, the whole experience is unpleasant in the workplace. Now, there's a quiet room. If that one's full, there's one over there 20 metres away, go to that one. That was the first change that was a challenge. The next thing, though, and the benefit that we got out of moving to this building is that because people have then adapted to that, and have less personal ownership of their space, they're more ready to move when you need to move them. So we can make churn happen in our building much more easily and churn is a big thing in a major corporate. In any given year that I've been there, and I've been managing this part of the business for 12 years now, we would churn on average anywhere from 40-50 per cent of our space. So 40-50 per cent of people moved every year because of restructures, project requirements, changing requirements of an adjoining group that meant that group was expanding and this group needed to move. That always meant a major hassle, a major change management issue for us, people being impacted, getting buy-in and approval, that happens much more easily now. It's saves us the best part of a million dollars a year as well and then has allowed us to take the next step and start to challenge people about the fact well, if you came to work today and you work here and over the weekend we're going to move you over there because we need that space now for something else, what about if you just

moved desks every day and you took pot luck about where you sat? So we wouldn't put the whole 1,600 workstations into a pool and go, “Hit a button and see where your seat allocation is,” but it would be, “If you're in Property Group and you're one of the 20, 21 people that work in Property, Property's got that space, Legal are next door to you and then HR's next to them, so we're going to group you guys together. Collectively that's 100 people, so 100 desks will be in a pool. Because in any given day 10 per cent of people are on leave or away, we don't need to give you 100 anymore, it's going to be 90.” If we did that right across the business and in all of the groups, I can end up with maybe another 200-300 spare workstations that I can then maybe move people out of another building and consolidate and save some more rent. We've trialled that with our group, the property group, and we actually found that workstations were only being used 70 per cent of the time. So there was a 30 per cent saving there. Some cultural issues to get over about people's ownership and people have a lot of security hanging onto their desk.

Interviewer: Personal association.

Mike: That's it. You like to know you're controlling your house and your life and where you sit and how you get to work and all the rest of it. This sort of means giving that control to somebody else ‘cause you might have a neighbour today that you don't particularly want to sit next to but that’s what you've got. Largely we've had success. 80 per cent of the group endorsed it as a positive experience and they could work like that. A couple of people didn't like it because it put them out of their comfort zone but we've proven it can happen and it can work. So, the next time we have a larger cost reduction focus on the group right across the business, that's one of the initiatives we have cooked and baked ready to go as a prototype that we couldn't have delivered in a different building, we can deliver in this building. So, that's certainly something that's delivered beyond what we thought we'd be able to do.

Interviewer: Just an aside on that, if you wanted to find Mary, how do you find her?

Mike: The phone's repatched automatically. So a PC, you have a virtual hard drive, it's not your PC. So whatever you save on your PC goes back to our data centre and it saves on your virtual hard drive so wherever you log in…

Interviewer: So you ring Mary's number, you have a fixed number.

Mike: And it will ring Mary.

Interviewer: And that rings where she is?

Mike: It reroutes, yep.

Interviewer: Wherever she is, it knows where she is as long as she's logged in.

Mike: So you don't need to take your phone with you, you don't need to do any of that stuff. PCs, as I said you don't need to take your PC with you. Literally you've got two filing crates on your desk that you can unload in the morning if you want and take your photos out and all the rest of it and then pack it up in the afternoon. Before you go you must clean your desk because tomorrow someone else could be sitting there and that just goes into a sliding storage unit behind you, which we've already got for other storage. So, nothing needs to change in the building except people need to understand that we might have to work in a different way and this building, throwing up so many other cultural changes to people has got them ready for change but you couldn't move from a traditional office environment to that - too big a change.

Interviewer: And that must be an advantage, as you say, when other things come along.

Mike: Yes, it is.

Interviewer: You now have a workforce that's more responsive to change because they've had to go through it.

Mike: It is, and a lot of people trial this and they like it. So in all of our new facilities that we've built over the last two years, we have a small hot-desking component in them now, so when people come from other sites. We have a very mobile workforce and today they might be working at Maroochydore, tomorrow they might be working at Landsborough, and they don't need to have a dedicated desk in both locations, which is what they used to have. They now have a hot desk in two locations and they've got a storage unit that they've got their gear in. So, it's a significant cost reduction for us and allows us to have a lot more flexibility around

property decisions so that's as I said, a key one for us. The other one is, I guess, the level of pride in the company by employees. They're proud to say, “That's our building. That's where we work,” and happy to show people through. Even now, three and a half years down the track, coming up four years, I'm often seeing people brought into the building listening to the employee that's bringing them in for a meeting talking about the highlights of the building. That's amazing, four years later they're still happy to talk about the good things in the building, the natural light and the quirky lift system called “Destination Control” that, you know, gets you quite stuffed up when you go into the CBD these days because you forget to hit a lift button when you go in the lift and you go, “Why is that lift not moving?” (laughs). Moving onto No. 2, “Are your staff happy and satisfied with their new environment coming from a range of other buildings?” The post-occupancy survey, if you're just focusing on the building, absolutely, nearly 70 per cent or 80 per cent are saying they're happy with the building, they love it. So, that lag indicator satisfaction issue around proximity to transport and all the rest of it, I'd say that in five years time if we did the survey again, you'd find that everyone's happy with that as well. So, it's all fine. No. 3, “How important was change management in implementing this project?” Absolutely critical. All of the property projects we had prior to this project and every property project we've had since then, and we've had very substantial property projects since this Newstead one, major major redevelopments of depots and workshops and all the rest of it, with large office components, they've had not a lot of change management given to them in terms of managing people's expectations and how they deal with the change, but for this particular project, I had a change manager and (counts) one-two-three-four change manager helpers and we had a structure set right through the business. Each group had a change champion. Each division - so we've got groups that report to divisions that report to the CEO - each division had a nominated representative from the executive general manager to make decisions on behalf of that division and to be the conduit of information back to the change champion team and they had to lead some of these difficult changes right through the business. A challenging one we had was no printing. So no printing on any workstations or any PA desk - it's all central print. So secure print. And to get people used to the fact that you might think you're important and you say you need to print all your legal documents out right beside you in case someone grabs hold of them, well, you can't do that anymore. For air quality purposes, it's going to be in that control room over there and you've got a secure access code that only you can access. You're going to

have to get up and go and print them. So they're not going to be spitted out of the printer and someone gets to look at your document. That took an inordinate amount of time to get people on board but it's working a treat and we don't waste as much paper 'cause you want to make sure the document's right before you hit print, send it to print, because if you get it wrong, you have to go all the way back to your desk and make it right. It's helped in a range of ways: reduced paper and improved air quality. Change champions also helped with loss of offices, all that sort of stuff. Transport plans, so they facilitated transport planning for all employees. If you wanted help about planning how you were going to get to work in this new location, we organised for Translink personnel to come to you and develop a transport plan for you including working through the best options. So if you wanted the quickest route or you wanted the cheapest route, you could do all that sort of stuff and that helped get people used to the fact that it was going to be okay. Pretty much everything that happened in the project was facilitated communication-wise through the change management team. So absolutely critical. We wouldn't have got this project through, we wouldn't have the levels of satisfaction even if we'd completed it without that change management approach. We needed it.

Interviewer: We've probably covered four.

Mike: Who are Energex's customers - well, that's changed, and we touched on earlier that Energex's customers were all the electricity customers. Energex's customers now strictly are the retailers, so energy retailers, and there's only a handful.

Interviewer: Do you have some examples of who they are? Is there a short list or a long list?

Mike: There's about five or six that I know of at the moment. You've probably seen ads from TRUenergy floating around. Certainly there's Energy Australia. There's Origin, there's AGL, Dodo - Dodo, I believe has gotten in on it as well and there's another three or four smaller operators that are starting up that will all be registered retailers and can sell you electricity. They get paid by you and me as customers, they pay us as users of our distribution network. So we charge them what's called a distribution use of system cost that's based on the number of customers and how much energy that customer is using.

Interviewer: Just to be clear, they don't have any choice in working with you?

Mike: No.

Interviewer: So they are totally loyal to you.

Mike: Correct. Well, no, they're not - they're not loyal.

Interviewer: Oh, okay. They don't have options.

(general laughter)

Mike: It can be a fairly dynamic relationship because if - us driving up costs through increasing network spend means that they've got the bad news of dealing with the customer. They're the face of the angry customer. The customer's angry about the bill...

Interviewer: So the relationship's all about cost?

Mike: Yeah. So if you phone up and complain or your mum phones up and complains about the cost of electricity, she'll phone her retailer 'cause that's what's on the bill. Energex is hidden away in the background. So the retailers are starting to show the break-up of the cost stack to say that, "Hey, we're only this much. There's Energex - they're that much." And that's one way of trying to shield themselves from the cost stack that we contribute to. So our customers are strictly speaking now the retailers and they're only interested in how much are we contributing to the cost that they've got to pass through to the customer. So it's even more important from our point of view to have a low-cost building than to have a premium grade building in the CBD. No. 6, "Are your customer relationships improved as a result of this building?" I don't think it'd probably matter one way or another, to be honest.

Interviewer: Not now.

Mike: Sorry?

Interviewer: Not now.

Mike: Not now.

Interviewer: It would've before, though, wouldn't it?

Mike: Well, it's linked back into community and customer, sort of almost a combined issue.

Interviewer: Because you want them to save on their bill and turn off power and your building is lit up like a Christmas tree, it's not too good.

Mike: Christmas tree, that's right.

Interviewer: Not too happy.

Mike: No. And that has happened, we've got a number of buildings still – We have a big building up in Spring Hill that one year during Earth Watch hour that, for some reason or another, that building didn't go off, it might have been on the wrong day in terms of the building management system, the lights were still on at 7 o'clock at night and we got a number of phone calls, saying, "You're Energex. Why aren't your lights off?"

Interviewer: That's a good example.

Mike: So we do have a very visible - we are very visible to the community, and if we don't do the right thing, they don't hesitate to let us know so it probably... From a perception point of view, good corporate citizen, it's important but in terms of the customer, they're not really interested, the retailers.

Interviewer: Not a normal customer?

Mike: No. No. 7, "How does the Energex building link to the local community?" Other than the fact that it's a demonstration of how you can do things and have a smaller environmental footprint and still have good business outcomes and the fact that the property community is certainly very interested in our building still, about how we did it and what we did, as I mentioned about the Bank of Queensland. A lot of people want to talk to us about how did we do it and why did we do it and did it really work. It is a challenge being a pioneer into this sort of stuff and there was a lot of risk involved but through a good team, we managed to deliver what we needed to deliver.

Interviewer: Presumably they have groups coming through on tours like what you would have had and maybe still do?

Mike: We still do, yeah.

Interviewer: And a lot of those could be schools and university students.

Mike: Universities more.

Interviewer: So that's community engagement.

Mike: You're right, there's that sort of engagement. University - there's still some media stuff. Certainly industry associations have interest in it and from time to time they come through.

Interviewer: The fact that we're here now is.

Mike: And that's all part of this, yes, that's right. If we can all learn from it then that's a good thing. No. 8, “How does the Energex building provide leadership to other clients that want to make a difference?” As I've just mentioned, it's there and open and available for learnings and we'll talk about the good and the bad.

Interviewer: Generally you've invested in your website to some extent to disseminate...

Mike: Some of that, yeah. Over time it's just slid more and more to the background. It was certainly a lot more in the forefront in the first couple of years. We're quite, I guess, protective of our image out there. We don't want to be seen to be living in a land of luxury when everyone else is doing it tough, hence we retain the data and the stories around what we are saving the business and what we are saving the end customer by having made this decisions. No. 9 was “Do you think Green Star adequately designs the environment performance of the Energex building and what might be missing?” I think it does but the only thing again is back to those external factors, so access to transport and other amenities. There's not a real strong linkage in Green Star assessments in that space about how far have you got to walk to get to the nearest doctor or the nearest chemist...

Interviewer: You get some points for being close to a bus stop or transport hub.

Mike: Yeah, those sort of things. And if you just make your decision on Green Star outcomes, you can be way off track. So you've got those more holistic things you need to look at, which you've picked up in your six point assessment criteria here so I think that's probably all I need to say on that one. For green performance, you've got question No. 1, “What were the key green initiatives used in the Energex Building” for the following (paper rustles).

(indistinct speaking)

Mike: Under those again?

Interviewer: (indistinct)

Mike: Yeah, I don't know if we can sort of break them down...

Interviewer: Yeah, because you haven't really done that. Let's skip that one.

Mike: You're aware of the Green Star building initiatives which we've got which is about water recycling and you've already got that info, I think, haven't you? “Can we have a copy of the Green Building Council score sheet?” Yep, we can provide that. That's fine. It's publically available and all that, so we can provide that. I'll just make a note here and I'll do that. “What are other information can we access when writing our case study report?”

Interviewer: It's more what are you prepared to give us to help us?

Mike: Yeah. I won't put it on there but the other survey data that we've got I can certainly provide you with that stuff.

Interviewer: Is that electronic?

Mike: Umm.... Hopefully I've got an electronic copy, yep. If not, it'll be sort of about that thick so hopefully I can get you the electronic version. This is just around general staff engagement, that sort of thing, pre and post the move. Are there any other questions you might have or do you want to go with it?

Interviewer: We're interested in anything you're prepared to give us that might help us to make a decent case study to underpin our new model.

Mike: Yep.

Interviewer: Brochures.

Mike: Oh yeah, I can certainly dig up some brochures.

Interviewer: Briefs, like we talked about, the design brief.

Mike: You've already got photos, those sorts of things, from people that have been there?

Interviewer: I have got photos. I don't have the right to - I haven't taken my own photos yet

Mike: Well you can, you can certainly send - bring someone back in and take photos.

Interviewer: You're happy if I come up and visit the building?

Mike: Yes, definitely, just let me know before you're coming to arrange a suitable time. If I can't take you around I'll get someone else to do it and you can take photos.

Interviewer: I haven been on the outside not the inside.

Mike: I've taken a couple of quick happy snaps for you this morning.

Interviewer: Thank you for your time.

APPENDIX 2:

Explanatory Statement and Participant Consent Form

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5 August 2015

EXPLANATORY STATEMENT

Dear Participant,

This is an invitation to you to be part of a research project on 'Development of a Triple Bottom Line Stakeholder Satisfaction Model' with BUHREC Protocol Number RO1689 conducted by Bond University as part of the Doctor of Philosophy degree. This research seeks to develop and validate an assessment model to objectively measure the impact of building projects based on a range of economic, social and environmental factors. The study involves obtaining feedback from an expert panel consisting of a group of specially selected individuals who have extensive skills or knowledge in stakeholder management, property management and sustainability development.

Participation in this research is entirely voluntary and there are no known or anticipated risks to your involvement. You are being requested a join a focus group of five other experts that will involve several hours of your time, including reviewing the proposed model and critiquing it. This will take place at Bond University towards the end of August. With your consent, discussions will be recorded to assist with correctly interpreting your views, but your identity will be kept anonymous and will not be used in any publication without your specific authorisation. Once the project is complete, you are welcome to request a digital copy of the work. The raw data collected will be kept in a secure place for 5 years, and then appropriately destroyed.

Should you have any further questions regarding the nature of this study, please contact the Chief Researcher, Professor Craig Langston, at clangsto@bond.edu.au or (07) 5595 2233.

Yours sincerely,

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PARTICIPANT CONSENT FORM

I certify that I am at least 18 years old and that I am willing to participate in the Bond University research project described in the accompanying Explanatory Statement.

I clearly understand the purpose and objectives of the study, its limits and the risks associated with participation.

I am aware that my identity will be kept confidential and will not be revealed in any written report or to any other party. The information generated from me will be securely kept at the Chief Investigator's office located at Bond University and destroyed at the appropriate time.

The PhD Candidate has clearly explained what is expected of me in this study and how my views are an important aspect of the research. At any time should I feel uncomfortable, I am aware that I can withdraw from the research without penalty.

Name: _____

Firm: _____

Signature: _____

Date: _____

NOTE: This study has been approved by Bond University Human Ethics Review Committee. If you have any complaints or reservations about the ethical conduct of this research, you may contact the Ethics Committee through the Research Ethics Manager (+61 7 55954194). Any issues you raise will be treated in confidence and investigated fully, and you will be informed of the outcome.

APPENDIX 3:

Focus Group Discussion Transcript

Strategic planner 2: I think the Triple Bottom Line system of measurement and - is actually a really good system, that it's - the fact that you are combining the financial, social and environmental bubbles to create a total system of measuring sustainability given that you say that there isn't a proper system currently that takes into account all those aspects of it. So I think that that's a really really good thing to have developed in that way. I think the star system is also a great way of measuring because it's familiar and that because of, say with Green Star or otherwise with other systems, that people can relate to it and then they can think that, okay, there's a star system, a one to six star Green Star and then that corresponds to this and although it's not a Green Star system that it's still familiar in that way and I think that that's really good as opposed to saying - I mean, you could have said it's one out of six on each one or A to F or I to V or V1, so I think that that's a really good thing. Does everyone else feel that sort of way?

Architect 1: I was particularly impressed with the idea of calling the composite score a progress score. That seemed to tieit together quite nicely. I liked the star rating system because it does tend to make it more of a qualitative assessment as well.

Academic 1: Like a currency, isn't it, that you use to put everything in the same terms.

Architect 1: Yeah.

Academic 3: I would concur. Burhan, firstly, I want to congratulate you on a great piece of work. I think this is going to be very interesting to see how it could be furthered within the industry, so it will be exciting to see where it goes. Also, I have to apologise because I probably misinterpreted your summary a little bit. I might

have been a little harsher in terms of my feedback earlier today, so please keep that in context in terms of the overall summary.

Academic 1: Just so everyone knows, you thought it would be appropriate to give some written comments before the meeting but we weren't expecting anyone to do that.

Academic 3: (laughs) You know, as academics we're always keen to give feedback, I suppose. I certainly concur with the Triple Bottom Line but I guess the word "government" for me generally goes for all three of both or all through those angles. I often talk about a fourth tier, which is government, as opposed to putting government in with environment. So, you might want to just play around with the theoretical components of the Triple Bottom Line because it has moved on a bit since the 1990s interpretation of it and I think that the government or governance more broadly might actually play a role in each one of those. That might be worth looking at. Just in regards to staff and the healthy environment, so I also mentioAcademic 3 in that feedback I gave back today, there's a lot of research done on healthy environments. Of course, this is really important, as you've sort of highlighted in terms of people turning up to work and feeling good about their work and so forth. I'm just wondering if culture couldn't be part of that as well, because culture's for us old hands at the Stanville [sp] development building, especially where there was in those early days this real focus on developing a very positive culture within the work environment. So it wasn't just having a green building, but it was also the dynamics of people working together as well. And also on that line, in terms of staff, maybe another indicator [in addition to] happiness, efficiency and empowerment might be health. I know that health is often used as a key indicator in terms of productivity. It's very expensive for corporations for people to be out sick and certainly at least with lawsuits and so forth, so that was just another little bit of feedback. Um... Then I've just got two others I'd like to add and one is in the community, the website, publication and other collateral under input. Sometimes I'm a little concerAcademic 3 about how, certainly as a working person, we tend to maybe subtly discriminate against those who may not have access to the Internet or to computers or maybe even rely on publication material, the newspaper being delivered to the house and so forth. So I'm just wondering maybe if you just need to look or I'd like you to just reflect upon the reliance on just websites, publications and other means of which input could actually take place. Certainly, if you're going seeking out input, there's usually a cost associated with that. Also, in regard to community, you've got community liaison and engagement. How is that going to be related - how is that going to be paid for and how is that going to be managed? So data, as you know, is very important. The right kind of data at the right sorts of times, and who's going to pay for it and what's going to be the meaning or the objectives in terms of the reason we're collecting that data. So, there's a bit of a download in terms of... Otherwise, it looks good.

Academic 1: Can I just ask a question on what you just said last then? With corporate social responsibility, that's really what I think Burhan was trying to get at here. How would you measure that?

Academic 3: Um, well, it's often tied into this idea of the corporate branding and you know we've heard lots of stories about Nike and iPhones and the sort of behaviour that goes on. I suppose it really - maybe if we look at the objectives of corporate responsibility and that's really often because corporations are motivated by money and advancing their business, and that can be quite brutal. As we know, corporations are not one person, they're generally a board and a mix of people, stockholders and so forth. So, you know, how do you get the warm and fuzzies component into a very brutal environment that's highly competitive? I know in the past there are a series of measurements out there that you should be familiar with. I think - Hey Architect 2, how are you? I think just in regards to stakeholders though, I suppose I was struggling a bit with the word "stakeholder" because it left it so wide open in my mind in terms of who might be a stakeholder and also perhaps maybe because the term is often very much used in community consultation, usually in a fairly sort of tense environment where there's competition or advocacy from one particular group. But anyway, getting back to Academic 1's point, I think that corporate responsibility really needs to be at least in this context about how it's going to match or enhance these first three components: input, process and output. I mean, in particular, input and process - where is the ethical responsibility? Maybe it could be a dialogue about morals and ethics, you know, whose morals and whose ethics are we talking about? Are we talking about corporate ethics, are we talking about social community wellbeing ethics? I think that it's fairly broad. Maybe there's other important terms on that particular that are part of the answer.

Architect 1: I could add something to that in that the stakeholder definition seemed to be not self-defiAcademic 3 - there's no room in there for stakeholders to actually self-define their areas of interest and I think in the community area - websites, publications, for instance, I've picked up that mainly we're looking at a one-way communication there: we're looking at the corporate websites, the corporate publications. It's easier now with newsfeeds and all the rest of it to actually monitor the feedback that's generated from within the community at a relatively low cost and so there's an opportunity there to actually improve upon two-way communication at that community input level. And if you couple...

Academic 1: And you're using social media for that?

Architect 1: Using social media.

Academic 1: To understand what the community thinks rather than the other way around.

Architect 1: And I think the model to embed that in corporate decision making might be a risk analysis model - you know, what are the risks of not doing a good check on newsfeeds and identifying where the potential community angst is going to be. I mean, a risk analysis model's been successfully applied to things like safety and design where we've really had to kind of remind corporate - the corporate

entities of their responsibilities to look after safety but we've also given them a mechanism by which they can assess how well they're doing in that role.

Academic 3: It just reinforces it in terms of legislation and policy, which I think is also important in terms of the context that's going on.

Project manager 1: I just wonder if that - apologies, I've come in late so I missed the first bit of the conversation, but just in terms of social media tools and whatnot, I ran a fairly large program for Virgin airlines a couple of years ago and we found that by monitoring Twitter feeds, of all things, and this was back - we went live in January 2013, so in a peak travel period we changed all the systems and we did a knife-edge cutover of 4000 odd staff, so it was a big deal. But we actually found that we were getting much faster information about what was happening in our company in the lines of airports through Twitter and through monitoring that than we were through our own internal channels, even though we had an extensive range of internal hotlines all active and people on conference lines, all sorts of things. So just echoing your point, this is even a couple of years ago and that was let alone before the event and after the event - there was quite advanced analytics you could buy to be able to analyse social - effectively use social media to analyse what the community was feeling and thinking about particular keywords or topics or issues, so the capabilities that are there if you're willing to pay for them are really quite advanced.

Academic 2: What we're talking about here is largely the perception of the stakeholders, isn't it? We're not talking any real measure of sustainability. This is about how we view things and corporate communications, which is the point you raise, has enormous influence on that. And getting the feedback that you've indicated to give you that overall picture so you can change strategies, so it's a very dynamic thing.

Project manager 1: Well, even in real time and not to harp on this, in real time we then had a team of about 20 people sitting on these tools and you'll see it if you ever go onto the Facebook page of major corporations, where you'll see these messages from the corporate team saying, "Oh that's a terrible story" and empathising with the individual and then asking to take them offline to fix the problem. They're aiming to do two things. One is to in a very real way address the stakeholder need but in another way to very quickly pull those negative comments off the public feed, so to manage that perception as well.

Architect 1: My interest too is one of the early stages and design involves briefing for the project and identifying what the context of the problem is. I mean the first stage of design is to identify what the problem is and having some kind of social media coverage enables another avenue for identifying parts of that wicked problem that you might have overlooked when you originally decided what it was you were trying to address. Some of those things might be completely left field, you know, and they might make you reassess the design brief. The other thing is that also can add to efficiency because the next stage in design is concept selection. You don't

have a way or any means or the resources to track through every potential design approach and weigh them the same. You have to make a judgement about where are the most profitable and the most likely design approaches can be found and so concept selection can be aided by a better community response in terms of identifying what the problem really is or identifying parts of the problem that might not have been addressed adequately in the original brief for the project.

Project manager 1: Burhan, could I just ask a question? So you've got in stakeholder groups companies and staff. Where does your broader supply chain fit? So this is where often really cut tightly coupled suppliers who may even function almost like staff but they're not - they've got their own interests. Where would they fit?

Researcher: Actually, this stakeholder group, it's based on Energex - they say this six - the idea is to build up real sustainability, not just for the building itself - it's for the whole stakeholder. But this, we can call it a key stakeholder, like some of these stakeholders include other smaller but equal stakeholders, or we can call it like as a company and under the company, there's more stakeholders, like sub-stakeholders. So by calling this as key stakeholder, that's including many sub-stakeholders. So I think we can by naming this as a key stakeholder, that's why I'm just focused on these main six - basically because it's already based on that Energex case study.

Strategic planner 2: But it could be good to have subsections within each of those that then could be identified that - that way that if there's a staff member who has another interest, like Project manager 1's mentioAcademic 3, then at least you're categorising it in the right section, I suppose. So then...

Project manager 1: I'm looking at a supplier might be - he might have a co-located supplier or things like even a cleaner or something like that...

: Contractors.

Project manager 1: Contractors who come in and do stuff in that building or in that environment but they're not - maybe they fit under company or maybe they fit under staff? I don't know.

Researcher: It's actually about organisations who would apply this model, some organisations would be like there's a correct number of a staff, there's no people who come from outside, just there's a correct number. Other organisations, maybe it's a little bit different. From my idea, I think it's more about the organisation who will apply this model.

Project manager 1: Okay.

Architect 1: More on that, I think the example where the QFRS has to review a design prior to the BA - BA being building approval - being given. In a way, the

QFRS had to force themselves into that process to look at fire safety, but in terms of being a user of the building, they're quite a crucial part of any safety and design discussion, for instance.

Academic 3: Burhan, can we just reflect a bit on the objective of the project? Because, when you look at this column under measurable performances, is it ultimately to make sure that the corporation that takes on this matrix or this guideline is going to improve profit as well as their branding?

Real Estate 2: A good question.

Researcher: It's - the idea of this model was because until now there no whole system to measure sustainability. Even it's like we can close all stakeholders because by measuring the stakeholders you can measure sustainability that's what the researcher, found - the best way to measure the sustainability through measuring the stakeholder satisfaction or performance. So that's why I'm measuring the performance for each stakeholder. When we get the degree of satisfied Mmm…., for example, company or for the staff, we can decide if it's succeed to be one part of the Triple Bottom Line, which is the financial part, or for example the customer community for social. Social's the hardest section to measure because at the moment there's a lot of researcher trying to find the right way to measure it but still need improvement.

Academic 3: Yeah. I guess I'm sort of getting down to the measurement because when we look at a star rating building system we're often looking at carbon emissions or pollution or other very measurable sorts of outcomes, whereas this is much more socially focused.

Researcher: Green Star as one part of this model, which is the environment, which everyone now rates their building - they just care about the environment, but they don't care about, for example, the social or the economic - it's good for the government, like when the building gets six stars, it's great for the government as well because now they're all on board for the policy and for the environment but the building and organisation, it's not about just the environment - it's all about the three main sections, which is the social, environmental and financial. So that's where the idea's come for creating this system, to measure like as a whole picture, not just one part, to make a balance between the three. Like, if we get the balance between the three, we can call that sustainable.

Academic 3: So if Energex was going to apply this, for example, what would be the benefits to Energex? What would be the transition - the outcome, transition for them.

Researcher: At the main three sections, we can go this. There's three main benefits. One, for the financial, which is they can know how the organisation does in a financial way. For the social, how the people look to Energex, which is more relative and gives a good picture of all of the community. And for the environment, like for

the environment. So… And for the government, like these days you have to follow the government policy and be like make them satisfied to be in the top of the Architect 2et.

Academic 3: Yep. So Energex…

Academic 1: We should ask Corporate manager 1 about it, 'cause Corporate manager 1 - we haven't actually introduced everyone's role (all laugh). Corporate manager 1 is actually an employee, a senior employee of Energex and was very influential in this building and it's actually Corporate manager 1 that has encouraged Burhan down this track, I suppose, through what we've seen from this building. It might be good, Corporate manager 1, to get your view about stakeholders.

Corporate manager 1: I think what Burhan's put in here is pretty close to what worked defendable. I've got a couple of questions around some of the assessment processes that you're proposing to use, especially one around staff. Staff happiness is influenced by a lot of things and probably one of the last things that influences them is the building, you know what I mean? Like it's important but it's not in the top two or three. It would be company culture, we touched on that. It's your direct leader that impacts on, I wouldn't call it happiness, but satisfaction or engagement is probably the word I'd use and that's the reason you get out of bed and come to work because you like your boss. And if you don't, those people move on pretty quick. Either the boss moves or you move. I think if you're going to try and assess the influence of the building or the facility on the happiness and engagement of staff, you're going to have to have some very strict criteria on what sort of questions you ask so that you don't get a contaminated result which is influenced by the culture - not the money that we spent on the building or the fitout. What we do, for example, is an annual staff survey and that's largely around engagement, so why do you come to work, do you feel happy about your work, how do you feel about your remuneration, all of those sorts of things. There's some questions in there about your accommodation, but not a lot, and then there's more - I'll just press that light again before we all go in the dark…

Academic 1: We're not activating it.

Corporate manager 1: It does work, but sometimes… And then the other part of the survey picks up results around alignment with the business, so you find that the people who are most satisfied in their job understand what their part in the company is as opposed to, you know, "I'm just happy coming to work for this guy." You'll be even more engaged if you understand where you add value.

Academic 1: So like productivity?

Corporate manager 1: Sorry?

Academic 1: Like productivity, in a way?

Corporate manager 1: Correct. The building doesn't have a big impact on that.

Academic 2: Might it also just be staff turnover? That's the traditional measure in the UK for government offices. I know it's not government…

Academic 2: We measure all that stuff as well.

Academic 2: That's very critical indicator [unclear] service structures.

Corporate manager 1: And, you know, levels of absence from work, all of those sorts of things. So we do a lot of analytics around that stuff and the building does have a bit to play but it's not a big thing. I think I said to you when we had the first discussion, a number of people left the organisation as a result of leaving the CBD, which everyone was wedded to. It's got so many facilities, transport comes in and out of that location, it's the best place in terms of getting to work, the CBD, in terms of options. Coming out here represented a big challenge to the organisation. It was a brave move and the people that don't have a vehicle to get to work, it was part of their package, that's the bulk of them, that's probably 1,500 people, had to find new ways to get to work. That's been the biggest bugbear around the whole thing. Five years down the track now, we've still got in our annual staff survey, the biggest issue for people is travel to work. And that's impacting their level of satisfaction. So it's that external environment as well that kind of - I'm not sure where that would get picked up here, 'cause it's not just an investment in the building, it's the decision process you go through.

Real Estate 1: And I think it'd be fair to say, Corporate manager 1, as well, that if you look at the precinct, Energex were the founding body that came here. If you were to ask that question in maybe another five years time when the infrastructure and everything else has caught up, it might not be an issue. So again, there's a really interesting point there in terms of what is the perception and what did the building do about it? Well, nothing. You've got to wait for the rest of the world to catch you up before people go, "Oh actually, it's really easy to get to work." And again, that's another influence.

Real Estate 2: Could I ask one and a half stupid questions, please?

: (laughs) One and a half?

Real Estate 2: Well, I think there's one that may be a half. You talk about sustainability - are we talking about the organisation or the influence of their built environment on their sustainability? Is it the organisation's sustainability period or about the building's effect on the organisation's sustainability?

Researcher: It's more about the organisation.

Real Estate 2: As a whole?

Academic 1: I read it as that, yes.

Real Estate 2: Right. So why is this coming out the School of Construction not the School of Business?

Academic 1: (laughter) Maybe they're not good enough to work it out.

Researcher: It's not about the school - it's about the research.

Academic 3: I think it's about buildings, green sustainable buildings that can help these other issues. Because what you're talking about is a knowledge economy and the creative class. So if you want to attract bright, smart, thinking, innovative people who are going to drive your organisation to that profit level that you're looking for, this is what you need. Google, all of these other people have already done it. So in order to achieve that, you need to provide a building like this, the right sort of culture and then you need to as a consumer provide that in the branding of - so when I see Energex, I think,"Oh, they do this, they do that, they do this," as opposed to the other guy, who maybe a bit dodgy, more reliant on whatever it is, or whatever the value set I may be attaching to that particular relationship, consumer relationship. So, there are two sides in terms of not just the consumer but also attracting the workers and I think this is why this is going to be very very important, because it moves just beyond this thing we've been working on and trying to just get buildings that are green - we're trying to get a work environment that's very positive and progressive and so forth.

Academic 1: That's a really good point.

Real Estate 1: I think, if I could just say, one of the reasons why when Academic 1 was first pointed to me via Vic, who's in the School of Construction as well, one of the reasons why I suggest that there was a really good thesis to come out of this building is that I think Energex have done - by way of introduction, I work with the building owner and I know a number of builders - but the thing that really impressed me about Energex when we first became involved with them was one, that they decided to make a cultural change, and it was a massive cultural change. Secondly, they decided to relocate to an area that was new, so again it was like it wasn't about "This is a proven answer," they were actually cutting the grounds for it to be. But the one that most influenced me, and that my own particular interest was in, was that right from the start they took every single member of their staff on a journey and they set up a team and they engaged the team from pretty much from day one right through until people were sitting at a desk and I think if - the question I would ask of this, I guess, is, will it give an answer to and one question would be - green buildings are very easy to measure. You can measure them on energy and you can go get lots of tick boxes and you can be 11 stars if there was such a thing. This building got six, the question for that would be did it get six because someone pulled them out of a chocolate box and went, "Oh that's handy." No, because Energex have thought really seriously about the building and what they wanted and that in itself is quite unique as most buildings are built

speculatively, not to someone's view of their life for the next 20 years. But, afterwards, the really interesting question is, after all of that investment, how do you know what bits pay off? So, you can go and measure the energy, oh that's wonderful, that's still pretty darn good and it got even better. But how do you measure the investment of all that time and effort and how do you come out with a metric that does that, because that's the golden panacea, I think. I guess my question to you is could you apply this - do you feel you could? And to Corporate manager 1, as one of the senior guys who've been involved in the project from day one, could you take this and could you come out with a number, a star, a something, that says - that sort of supports that we did the right thing. But, more importantly, we got some learnings out of that as well because maybe we could've - we didn't need to get six stars, maybe we could have done five, but tweaked up something else. Maybe we should have put more effort into the communication after than before or maybe they would be the fantastic lessons. I think the building in its own physical right stands to be tested easily because there's a whole bunch of things you could do. The people in it are the people who've got to live in it for the next 30 years. How do you measure them? And absolutely, what Corporate manager 1 said as well - when there's so many other parameters that could be, you know, while your boss is being a nice man, I hate this place.

Academic 1: And I also think....

Real Estate 1: And I can ask, the panacea is could this help justify why Energex in 20 or 30 years time could go, "You know what? We'd do that again." Or do it a different way.

Strategic planner 1: I also think that what Kevin mentioAcademic 3 earlier about engagement, at the start, most post projects fail not because of technology's not there...

Real Estate 1: Absolutely.

Strategic planner 1: It's how you engage with those employees and the final outcome of a survey is going to be tempered by how you dealt with them right at the start. So I think it's very important that the outcome will be determiAcademic 3 by the initial engagement and then taking them through the journey, as you have, you're guaranteed to get them on board. Of course you won't satisfy everyone, but they'll see where they're heading to, what my workplace is going to be. It may then differ their views about all of the other more difficult issues. But if you don't engage them, those other issues become too huge to overcome and they will then temper that resolve.

Architect 1: And if I could go back to that, I'd say that post-occupancy evaluation is a valid tool for validation of that process at the end but it certainly doesn't pick up on the engagement area. There's opportunities there to engage people at the beginning of the process that a reliance on inputs from post-occupancy evaluation have delayed that input too long.

Project manager 1: So how do you measure things like - so if you look at sustainability in the broadest context, not just about buildings but about the theory of concern - sustainability. One of the core principles that seems to be coming out of a lot of the research in sustainability is this idea of collaboration and being able to solve problems and then if you look at built environment, one of the reasons why we still come to offices and don't just sit at home and telecommunicate is human interaction. So, I'm really interested as to how do you measure what effect the built environment has on the social, the social interactions and behaviours. Does it have an effect on diversity? So, an example might be you moved to a building with one coffee shop and suddenly you see all of these interactions between people because they're literally meeting over the coffee cart. Or, if you have a building where everyone's got to walk past the boss to come in, and people then feel bad about arriving at different times, that building, the built environment might actually cause it to be slightly less conducive to working mothers that have to drop their kids at school. I don't know what it would be, but how do you measure those things about the effect it has on how diverse and how collaborative the workforce becomes?

Academic 1: I think that's what Kevin said, actually. Post-occupancy evaluation, that does target the people that are using the facility, not the community, but those that are on staff, those that are customers, people that come and go could be part of that process of assessing their opinion, which could include all of those things that you mention.

Project manager 1: But some of it would be figuring out not just - 'cause, coming back to your point, Corporate manager 1, in the same way that people will leave an organisation if they're feeling not valued and not getting along with their boss, people will also leave an organisation if they're not feeling comfortable in the space, that will - and so that will then mean that to some extent everyone might be happy, but you might have no diversity because all of the people that weren't happy, they left. All the people that were different left. Or - so it's then how do you measure things like well, do we see more collaboration and more human interaction? Do people run into each other more? And therefore you see more innovation. I don't know how you measure it, but we all know when we choose buildings that we see it happen.

Academic 1: Maybe one way, I mean I'm just speculating, maybe one way you can test to see whether it's all kind of worked out is whether the company is successful overall; whether it makes more profit or, you know, that sort of more objective high-level outcome - the company's growing, it's winning jobs, it's making a difference to the world that it works in. That could probably be tracked back to all those little things that you mentioAcademic 3. If you get all those right then you see it in the end result, perhaps.

Corporate manager 1: There's probably some circle of things you could do to. Along the ground, where you've got a creative workforce in a traditional building, you don't pass each other much except in the elevator and you don't talk. So things

proceed in that orderly fashion, so they get approval for a project or getting stakeholders all sigAcademic 3 off on an initiative or whatever, it'll be a folder way around it or an email chain. You could look at whether that process is accelerated - if you've cut time in that email traffic may have reduced because there's no need to email everybody. We did track that for a little bit and email traffic did drop. I don't know what's happening now because we didn't maintain that but there's things like that. I'm sure there's other metrics that you could look at to prove that up from a tangible point of view and then there's the more holistic stuff that we're talking about.

Real Estate 1: But in all of those things must go to a feeling of wellbeing and there's a lot of post-occupancy studies going on at the moment. There's a lot of people researching what it is you measure but ultimately all those things either must lead to reducing frustration, increasing a feeling of being part of something or - the point is how do you get the five or the six?

Corporate manager 1: You make not be able to define it and segregate that outcome but it's contributing to that improvement.

Real Estate 1: Absolutely, yeah.

Academic 1: If you did a post-occupancy evaluation, and say three of the [unclear].

Real Estate 1: Well that's what interests me.

Academic 1: And you've found out that there were a lot of issues, at least you'd know where to exert your attention.

Real Estate 1: Absolutely. And the other side of it is - and again, the interesting thing I felt about the Energex project in its totality was again I got to meet a lot of people who worked for Energex along the way and some of them go, "Who the hell invented that stupid, you know, on your own [unclear]?" And then you'd meet them nine months later and they'd be going, "Oh, that's fantastic, that ruddy thing. Now I get it. If you'd asked me day one, I'd have said - I did say that was rubbish. Nine months later, I love it. I can go in there and I can lock myself away." I've actually- that's a testimony from someone I know in Energex. He said, "Oh, that's the best thing since sliced bread. I can go and lock myself in there, read my piece of whatever it is I'm doing, and noone disturbs me." And so again, that's the point, that post-occupancy evaluation is something [unclear] because people learn how to use the building, they've got to change the culture, and that was the bit, I guess, if you started in 20 years you'd bring in staff and try to change the way they think. The first few studies potentially are not going to be great, and that was really my concern. You're actually asking someone to change the way they may have worked for 20 odd years, in Energex's case, so how long does that take for the relearning of things and then getting the benefit and then what are the learnings out of that. And that would be, I guess, if I had a question, it would be what are you trying to get out of this is that measure and how would someone, a simple person who works

within the business or made some of those decisions, go, “You know what? That gives me some feedback.” Because one of the great problems of our Green Star building is, and they come via LEED and they come by all these other things, is now people are saying, “Well, that’s fantastic, but do I really need a blackwater treatment plant and what does it do for me? I’ve got seven things for it. Did it really make my role better?” The answer sometimes is probably not.

Academic 1: It’s an interesting point you’re making ‘cause when I read this I got probably the false impression that 3.66, if that’s an answer...

Real Estate 1: I thought it was the meaning of life, or something.

(laughter)

(all talk at once)

Academic 1: Like at some point when it’s done. You could do it three years later...

Real Estate 1: To me that was fundamental, if you were to - and that would be a really interesting question to ask Corporate manager 1, because he was involved in the early days of “This is why we want to do it,” bringing up to it and handing over and now it’s five years on. What would be the learnings? And that’s a problem, I guess, in some respect. Business carries on, there’s natural attrition for lots of reasons. People then come in who don’t question the business but do they have a completely different way of using it?

Academic 1: There’s an evolution going on at the time.

Real Estate 1: Yes, and then does the building actually work better now because actually all the all dinosaurs are retiring and, you know, and the young kids are coming in and they use it in a completely different way or... And again, that’s another question again is does the building have the ability to move with the business, and that as a landowner or building owner is again is a panacea for us. What is the perfect sort of footprint that lends itself to changing business needs?

Strategic planner 1: But the business - the building in my view has changed the people. I can give you one example - Qantas. They were going through a terrible period, of course. The campus was being refurbished at the same time. I’m not too familiar with what happeAcademic 3 but there was a total rework of the workspace, open plan...

Real Estate 1: I can tell you all about it.

Strategic planner 1: I’m sure you can.

: That’s right (laughs).

Real Estate 1: And do you know where they got their inspiration from?

Strategic planner 1: No idea.

Real Estate 1: We brought them to see Energex (laughs).

Strategic planner 1: Okay. But what I found out, having worked there for five years in the older buildings and then I went back. Even during the dark days of Qantas, people were very very upbeat. So what do you attribute it to? The building refurbishment? The new space?

Real Estate 1: I think so. And the great thing we tried to encourage... Qantas had that vision, I can't claim that it was inspired by meeting with Energex, but one of the things when we started talking to them was - you're going to take your people on a journey and even worse than Energex, it's going to happen around you. At least Energex lived in the building until it was finished. This was going to all happen around them. You really need to think seriously about your communication and we brought them down and Energex kindly put on a presentation of what they did and Qantas took that away and actually did very much the same thing. So they set up communication groups and they took people on a journey and the whole thing.

: You're quite legendary.

(laughter)

: Taking people on a journey!

Real Estate 1: But the amazing thing was, I did the due diligence on behalf of Energex so I - I think Cromwell actually looked at buying it, and I can remember going in these godforsaken old buildings that were really looking unloved and walking down these long corridors where all there was offices each side with the door shut and just no communication, nothing. Now, you'll find, these break-out spaces, very much like the Energex ones, just bustle. People don't sit in their office to have a chat. They grab someone and go, "Let's go and have a cup of coffee, let's go and have a talk," or "Let's go and sit outside," because you've created all these environments in which people come together and that's what changed utterly their culture and I was there when we literally handed the building over and not long after - have a look at these massive, massive cuts we've got to make, it's going to be pretty awful. And you're absolutely right - there was some concern, obviously, a lot of people had to go. But fundamentally underneath, because everyone was talking and there was connectivity...

: I felt that when I walked in, yeah.

Real Estate 1: ..and they've got a big atria not dissimilar to this. And the CEO put some breakfast talks on every couple of weeks and it's beamed over everywhere and

so everybody felt engaged and didn't think that something was happening behind their back and they'd always, again, grab that culture of communication from the early days and kept it going and I think that was...

Strategic planner 1: The question is, how do they measure it if they do?

Real Estate 1: Well unfortunately I really wanted them to get involved in that and I don't know that they did it, certainly to the extent that Energex did, otherwise I'd be sitting here doing my PhD.

(all laugh)

Real Estate 1: But look, I don't know and I guess that's the bit that really inspires me because I've seen buildings like that and I really think that the absolutely crucial element is both organisations had a vision and they had clear objectives of where they wanted to go and they were the drivers of getting there and everybody else helped them. It was very collaborative but they actually only helped deliver the vision as opposed to an architect, a developer, or someone going, "How much can I build this for? Oh geez, that's a bit expensive. Let's knock some things out. There you go - one of those," and someone moves in. And I think there's a fundamental difference and if ever there was an argument in my mind about why that investment's worth having, I think it's probably because of the Corporate manager 1s and the Qantases and, you know. But how do you quantify it? Because if you could put a dollar on it, I could go around to all my tenants and go, "You don't want to do that. This is what you want to do." And that's what I'm looking for.

Project manager 1: I think where you'd look there is you'd look into pure sustainability and something like Five Capitals model. So you'd start to go and say, a business has financial capital and you can look in the bank for that. But it also has social capital, and that's how connected the people are. So you would look at what effect the built environment is having on that social capital because then… Now, I don't know exactly what the tool is used to measure social capital but I think that's where you'd look for it. And then you might also look at human capital and say, "Okay, since we've moved into this building is there any discernible difference in the people that this building or in this location has attracted because those..." And where it's difficult is in our society we're still mostly looking at financial capital and yet financial capital comes out of those other things. If you've got really high social capital, then that will start to produce innovation and that will put money in the bank but there's a time taken.

Academic 2: Can I just ask a question? We're talking about staff where it's four stars, which is pretty good. It's a good start for the first attempt, but when you look down to community, we've only got two stars.

Academic 1: This isn't based on a particular... This is just an example.

Academic 2: Phew! (all laugh) I was worried.

Academic 3: Just getting back to your matrix here, I'm a little confused by the customer component because the customer - we've talked a lot about culture, the importance of green buildings as the outside holder in particular and the reasons why you would do that but ultimately getting back to Corporate manager 1's case - getting back to that branding component, which I think's going to be more difficult to measure, is that me the consumer out at Nundale making a choice between say Virgin, Jetstar or Qantas or whatever it might be, what is my decision-making process based on? Is it based on - is it progressive and it's seen as green and these other values or is it some other sort of customer satisfaction component? I guess it's sort of getting back to the money-making that pays the rent for the asset, in particular. It's almost like two studies and I know that it could be quite large, Academic 1, so I'm just sort of wondering is it really a post-occupancy evaluation looking at the asset holder, how these cultures can be shifted and changed and why you would want to build these sorts of assets or are we also sort of looking at the branding and Architect 2eting component as the consumer - why am I going to that particular provider?

Real Estate 1: Or what are you investing in it, is where I came from. I think if you - I don't know if Energex could come out with a spreadsheet necessarily and say absolutely it was because of this and we've earAcademic 3 a dollar, but I'd like to think very positively we could say it was a good a move, a good business move.

(all talk at the same time)

Academic 3: But it would be helpful to quantify that, wouldn't it? If the bottom line is...

Real Estate 1: Those decisions are justified - those extra stars, that extra, is really justified...

Academic 3: That's right.

Real Estate 1: ..in all these ways, then you would really - you've got something then that justifies that investment, not just immediately but over time as well. And that's the other thing - so many studies have been done about immediately, Green Star over the next 52 weeks, or whatever it is, but over five years, 10 years, 50 years - how does that building go? Because that's the next point is about transitional buildings as well. It's not just about the building for now and the next five years, it's about how that transitions into the future and connectivity changes.

Academic 1: When I was reading this I was sort of focusing on the measurable performance column, I thought, okay, payback period, that's about how long does it take to get your money back. So that's very tangible and very financial.

Strategic planner 2: Is that the yield? So essentially it's the yield of - it's the achieved yield.

Strategic planner 2: It's what you got over what you had to spend.

Strategic planner 2: On the asset?

Strategic planner 2: And how long did that take to break even.

Strategic planner 2: Just with that as well, I don't know if that's something that for a building for a tenant - that's not necessarily something that a tenant would have access to, it's more something that a developer would have themselves. It's not something that they...

Corporate manager 1: We still do a business case which compares a cash flow with another cash flow. So we've got a rent stream we've got to pay if we stay somewhere else versus here and the benefits that come with this building are lower outgoings and everything so we do still do a business case, yep.

Academic 1: So you've got payback period, which is a measure of, you know, how much money is the end result of your decision and then workplace ecology index - that's really assessing people's satisfaction in various ways and it includes your boss and how you get one with them. It includes the climate and the health of the environment that you're working in. It includes the tools and the productivity potential that you provided to do your job and to me those things combiAcademic 3 together were a good measure potentially of how financially the organisation will perform because if you're making money and your staff are all upset, it probably doesn't make any sense, right, so they're going to go together. If you're making lots of return on your investment it's because your workforce is on your side and contributing. So when I saw those grouped under financial, it sort of made some sense to me. The next two, which are I think the ones we've been talking about, loyalty and corporate social responsibility, are very much social things - you know, will you come back to the organisation? As a whole, from all the things they do - the buildings they build, the service they provide, the image they have - are you loyal to the company? If you're loyal, it might eventually find its way into the financial side as well, I guess, but this is trying to measure the people component and corporate social responsibility is like the opposite of loyalty. Customers are loyal to you and we're local to the community that we sit within so it's like an exchange of social capital happening there. And the final two I was interested in as well, because government's very - one of their mandates is to show leadership and I guess that can be evidenced through what companies like Energex and Qantas do in the world and how others can learn from their experience and how we can all get better. And the final one of long life loose fit low energy, well, for the architects in the room, you all know what that means. And that's a lot more than Green Star measures, because that really just measures - it's more focused on energy, really, but it's about resources. But building for longevity, well, you mentioAcademic 3 this building in 30 years, to me I'm still horrified that in 30 years time we may not need it anymore. That would be...

Real Estate 1: Oh no, I guess my point is if you go into Europe, people are still sitting in buildings that are 200 years old.

(general murmurs of agreement)

Academic 1: And that's a good thing, I think.

Real Estate 1: I absolutely support it as a good thing but in terms of their flexibility to adapt to an ever-changing environment, are they easily adaptable? From my experience of living in a country like that, it was bloody awful. It was really difficult. It was very hard. So whilst yes you could argue isn't that wondrous resilience, how flexible is it and what price did it come at? Whereas I would suspect that - I certainly don't have the foresight to look into the abyss but I would suspect that this building has some fundamentals - and that's what's fantastic about it –it will be able to be very flexible for a long time to come and that's a really great measure about what buildings work and what don't and why they work. And the other one, about the investment of society, societal investment, to me would be two really interesting questions. Had Energex not sigAcademic 3 on the paper back when this was a muddy very basic pretty average-looking place, I wonder how many other people would have invested into that. So there was a big societal investment in terms of putting faith in this community. And the other one is, the community as it grows will have a massive impact in terms of how this place then responds to that as well and that's another life to come. And I think again in Energex's - what was great about Energex was they did start to think about that stuff and with Qantas some of their decisions about where they wanted to be was really about logistics and about a whole bunch of others things that meant that they had to invest in... But how that then influences society around the local community...

Academic 1: Well, that's the part I was going to mention because if you accept what I've said about the first two contributing to financial performance and then the middle two social capital that Project manager 1 mentioAcademic 3 and the last two showing leadership towards the sustainability of the environment within which the organisation sits and taking a much wider view than a Green Star rating would ever do, how do those three groups interact with each other? Well, to me it's like a balancing act. If you've got the three circles, overlapping...

Real Estate 1: Which was the diagram.

Academic 1: ..then if one of those three circles is not so good, one can move stuff from another circle to make it better. Like we could reduce our financial performance, we could take longer to get our money back, but we can use that money to invest into the environment or into the social community to bring it up to a more balanced thing. So maybe there's some - I know the number is just a point in time but one could track that number.

Real Estate 1: Yeah, I actually - I guess where I was coming from was exactly the reverse, which was the danger of the number is that you go - 3.66. What should we be? 3.67? Are we close? Whereas, potentially with those aspects, because they're so important and they might be restricted because ultimately your business model might only allow you to go a certain way, I actually thought and I think the downside with Green Star and the downside with NABERS is, NABERS you don't get a pattern back until you've gone another 15%. You could work your backside off for the rest of your life to creep up between that half a star and no one will every know because you're always - you've never got the hurdle. Whereas to me, when I read this I began to wonder whether or not the sinful "How could I see what I've done with it" was valuable, was almost creating the 360 where all of those elements are actually somehow shown as a 360 analysis and maybe even where you have the ability to have a defiAcademic 3 outcome going in or in the defiAcademic 3 restrictions. Qantas was never going to be able to be not where they were because that became about logistics. Energex could make a choice and that then created an opportunity for a huge social impact. But how would you do it? Only by having some sort of 360 potentially that said within the bounds of what I could do, I'm really up there. And that's not about a star, it's about some other you're minus 10, you're plus 10, well, the best I thought I could ever be going in was five, and I got six, that's fantastic.

Architect 1: It's interesting too...

Real Estate 1: And you begin to see pictorially how that begins to show in terms of what you want and over time, then you can begin to see how that attracts all of those things as opposed to just going, "Well done, Corporate manager 1, now I'm pleased to tell you after 10 years, you're now 3.87." Well, what does that mean? How do you qualify as opposed to being able to see...

Academic 1: Wouldn't it mean there's been like an 8.3% improvement?

(all laugh)

Real Estate 1: Or it could mean we had a very beneficial year and we donated $27 billion to something. And that's the point - it would show you where that went and whether or not it was hard earAcademic 3, it was assigAcademic 3 to it, it was cultural, it was like, whatever.

Architect 1: When Green Star first came out as an environmental modelling or audit tool, I think four star was considered good, pretty damn good. But there's been some kind of aspirational shift as well. Now it's five star. People now are trying to achieve six star buildings, so even just having the measurement tool has pushed people further along.

Real Estate 1: It has but I would argue that why you do that if you're not careful is you go and buy a blackwater treatment plant and you go,"There you go! Fantastic," and it means nothing, really. You've just got your chequebook out and you've

bought something, potentially. Whereas if you tracked all of the green stuff, and I'm a fan of Green Star, but if you're able to track and pictorially show where you felt you'd like to make a difference, so for again going back to Energex, sorry, if I went back to Energex's thing, which was make a great cultural change, get connectivity. If none of those things were done but they still ended up with a six-star Green Star building, which is quite feasible, would it have achieved? So suddenly, you might been right up there but actually by bringing in all of these other elements. That's the point - you might be very limited in your ability to do some of those things because you're an existing building and it's 1800 built and you're never going to have a fantastic solar whatever because you just can't. Well, you shouldn't be penalised for that but how can you then begin to tweak the areas you could influence?

Project manager 1: Coming to that point, maybe you would have better conversations, like I'm just trying to reflect what you're saying, if instead of star ratings it was instead some sort of spider graph that shows this building has this spider graph because not only would it give you the richer conversation – yeah, the right things ,but stars and measure at the end, but a spider graph that doesn't try and make 3.66, it...

Real Estate 1: It tells you where you were and where you want to be.

Project manager 1: ..tells you this building has this pattern. The second element to that is that this building is meant to serve business and the people in which it lives, so for one type of business, if your business is very utilitarian, say you know you look at say a Bunnings warehouse and they're meant to - the chalk is not there because they're trying to be cheap, the chalk is there because it's meant to communicate to you that they're working hard on prices. And so this then says it might be if you had the spider graph and you then entertaiAcademic 3 that conversation that says what does your business need, well, this building is right for this business because its spider graph says it's really strong financially but it doesn't do much for you - you're social. Whereas for another business where you're very innovation focused, that social is worth taking a few points off environmental and financial. The right think, but maybe look at ...

Real Estate 1: And the other one that I thought was over time. As you say, you might see this cultural shift of young Gen Ys and so in your occupancy surveys you may begin to see things going up or going down and then you can you bring - the way we influence that and our people thing is because where they're pointed to is in this end and I can...

Project manager 1: If the building doesn't meet the people anymore, you need to say how do we adjust?

Academic 1: So you're saying the strength of the approach is in the approach, not in the answer?

Real Estate 1: I think the way, yeah, in the approach, and not ending up with a blob, because it's really hard to interpret a blob and I think it's probably one of the things you've struggled with, is when you start with something you're trying to bring all of these aspects and you know they're all interrelated but it's almost impossible to try and work out how. In trying to congeal that down into a number is almost too hard to visualise, but if you can pictorially see that, you can also then see it shifting and see why you did something and why that's now moved and that might be a positive move but it might not be the move you were expecting and that's the point.

Architect 1: I think that's what the star rating's achieved - it's kind of a stand-in for integrating the area of the curve and I think that that in a way they're both achieving the same goal.

Real Estate 1: Possibly.

Architect 1: I mean, I like blobs 'cause they're visual but star ratings I think do the same thing.

Real Estate 1: I was just thinking with the segregated...

Academic 1: [XXX] a project manager, in [word] actually but often what we do when we're organising a plan for a project and we're thinking about how long it's going to take and so forth, we know we're wrong - you can never be right.

: That's one thing you're sure of!

Academic 1: But the benefit is in going through with the logic of it and coming up with a baselines that you can use to manage and compare yourself with. We were never right, but yet we fulfilled the objectives that we were aiming for because we developed a baseline that was reasonable and we continued to control and monitor what was happening to make sure it met the baseline. So in the end we got a good outcome, although the outcome was never right in the first place. We just hadn't identified it to make it happen. So too here, one could go through and one could think about all the issues and one could come up with a baseline of what our objective is and then one could continue and monitor it and make sure it's realised. The benefit's in the process, not in the answer. The answer could have been 4.66. It doesn't matter what they get.

Strategic planner 2: I can see how this model as well could relate to other organisations. It's possibly something that I could put forward to the company that I work for, which is Westfield. We're doing a shopping centre development up in North Lakes at the moment and that is a new facility in a sense. I mean, from the company's side we would be able to ascertain what the payback period is probably based on the yield. I think that the two-year rating to achieve a six-star or less than two years to achieve six stars is pretty optimistic. I think that extending that out a

bit further - I don't know if there would be any buildings that would be able to achieve a six-star rating or anything that would be able to achieve...

Academic 1: Sorry, you mean in terms of payback period?

Strategic planner 2: Yeah. But for us, I think that given that our staff, our customers and community are such a big aspects of a building, that would actually be quite a good thing to be able to measure.

(general murmurs of agreement)

Architect 2: Can I make the point that I think measuring is important but I think our whole society is too fixed on measuring things when we should be understanding the changes going on. So I really support the idea that a spider diagram is a better way to present things as opposed to a star rating system itself because one can actually make an assessment and that can be an individual assessment and a group assessment so it's - it gives the ability for further analysis further, so it's not a complete system. When you have a star rating, you've achieved a result. That's it. And story over.

Project manager 1: People don't talk enough then, they just go to the answer.

Architect 2: That's right. One of the problems with the whole metric scenario we face in our society is that once we've achieved a six-star rating, that's it. We don't have to worry anymore.

: We boast to others about it but we don't think any more about...

Architect 2: One of my learnings as an architect is that the true essence of sustainability is the balance of these things and I think you're right in picking up that this is not just about one of those things - it's getting a balance right. Now that balance will only ever be at one time, right. So therefore the important thing is to have time as a major factor in this because if you do a survey, no matter what it is, you're going to get a different result the next day because there are different people, different circumstances, so the only way I can understand that you'll get something really meaningful from this, and I think it's really admirable to tackle this, is to find a - I use the word metric - that has time and information incorporated in it. And the only thing I can see at the moment is a three-dimensional spider diagram that is constantly changing.

Academic 1: Or a system dynamics model which is something that looks at all the relationships over time?

Architect 2: So if you're an organisation, so Energex for example, in 30 years time, correct me if I'm wrong, you may need to go through this whole process again and in the next 30 years, you can actually see what's been happening in the organisation because you are measuring these elements. It might be subjective, it

might be objective, but they're the things that will [word] change and give you some basis of making decisions. I hope that makes sense. I think for me we spend too much time on stars and ticks and things and not enough time on the analysation - analysiation! on analysing where the changes are, why they're coming and responding to that and I think, I say again, the benefit of this to me is understanding the balance. It's not whether something's fantastic and you can leave it alone. It's just, if you've got a sphere, you're heading in the right direction. If you've got a really pointy rock, you know you've got work to do. It's just an intuitive thing that everybody will get. The danger, and I gave coincidentally a Green Star course here in Brisbane today, and the danger is that everybody's fixed on stars.

Real Estate 1: On picking up numbers, that's right.

Architect 2: It's all about number crunching. And it actually distracts you from what we're really talking about. And what we're really talking about is continuous improvement and how to make things better. So visions, leaderships, all of those other things are really important. How do we do that? We need mechanisms to guide us and I think as a starting point this is great and a couple of things like the presentation of the information will go a long way to making it really meaningful because I think if you end up with numbers or stars straightaway a lot of people are going to lose. So what?

Project manager 1: I wonder whether another point of that is that one is measuring the building, measuring - you spider graph the building. But the second one, and I think this is where it would get really clever, is trying to measure the needs of the occupants. That says, "Okay, the building delivers - it has these strengths and weaknesses and the spider graph shows it's very economical, it'll really help your social interactions, but it's probably - from outside it doesn't look that brilliant or whatever and the community's not going to love it but the occupants might, whatever it is, but the second part would be if there were a way to then measure or assess what are the needs of potential occupants. That would then - that would be really clever because that would then be a system that says it's not just about race for the best building - it's actually about looking for the best fit. I don't know how you would do that but effectively if you had that other part to it that said not only we can assess a building along these but we can also assess the needs of a potential occupant.

Academic 3: It's part of that vision, isn't it, because in a way you could get that vision, that's why you do these projects, but there's a lot of people out there who aren't like Corporate manager 1 and don't get that vision. I'm thinking of 2004 back there at the Chambers of Commerce of the Gold Coast City Council and that project you worked on and the big picture that you put forward and how most of it fell over because they just didn't get it and this is where a matrix of - this is where you need to take people on a journey. Show them visually why they need to do it because this is going to be the output and I think this has been part of the problem in the past is that it takes vision for people to understand where they're going without

fully understanding it because we've all around the table experienced those environments where there's just people who don't get it and this is where I think the tool's going to be important to show people what it is this is going to offer in terms of... And the other thing is perhaps what you're saying with all this that the context of every project is always radically different, and also the political environment that surrounds that, so this is why this particular 3D model or whatever is...

Real Estate 1: And if you took - if you take Green Star and NABER's energy, a lot of government organisations which will typically drive a lot of those changes because they set the benchArchitect 2 and the perfect support to what you're saying is, "Well, I want to be 4.5 star NABORS and I want 5 star Green Star," and you go, "There you go. Thank you very much." Tick. And no one every goes back to go, "What did that do there? How did that go?"

(all talk at once)

: And that's the point there - it's fundamentally...

(all talk)

Real Estate 1: Gives them something that they can see *why* investing in something gives a good return.

Corporate manager 1: Another important thing about not having stars or just a rating number by itself - I think you could use them, but a lot of organisations will see that as a threat. If I go through this assessment process, will I want the result?

: Am I going to want to see it?

Corporate manager 1: That's right. You present this model and there's no right or wrong, it's a bit like a Myers-Briggs outcome, there's no right or wrong.

Real Estate 1: That's right.

Corporate manager 1: So that's what you look like. Is that what you really want the business to look like? Or is that more like this.

Real Estate 1: Is that what you want to be?

Corporate manager 1: That's right, yeah. So I think there are some benefits, yeah.

Architect 2: And the benefit of that too is you - that different people using it and different people using it in in different ways so it becomes really valuable because you get different outcomes from it. I think therefore it becomes a model of balance as opposed to a model of outcomes. Does that make sense? We're talking about getting an approach right rather than getting an end result.

Real Estate 1: So, I mean, can I just add to that, most importantly as well it's about having a tour that is dynamic and measures the effect. Because everyone's going to be very appreciative and recognises that all of these effects are interrelated but what no building does or no study at all does is say you take a bit off this one - if it gets cold, people get cold, they can play, but what about some of those other much harder interactions about space planning and interaction and integration and churn and whatever, a thousand other things. What effects do they have? Well, how do you position that in this interactive ball and that I think goes a long way to then productivity and a whole bunch of other things.

Architect 1: I think that's the benefit of any kind of model that weights a range of criterion because it actually forces you to discuss the trade-offs and it actually makes them transparent so that people can have a discussion about what the priorities are, what the interests, the sectional interests are that are being weighed off against one another. And I think that's where a model which actually lays open those weightings is really important for discussion and I think it's...

Academic 1: We talked about the numbers and it's much better to have a pattern that we can be informed about how the organisation is tracking but to draw that in...

: You still need the numbers, you're just changing the emphasis.

(all talk at the same time)

Real Estate 1: You need obviously you need some form of measurement but again it's very difficult to - how do you put some numbers say to people's feelings, et cetera, it's about interpretation and those questions and ultimately yes you do. I guess in my mind the killer is you take 10 intangibles, try to measure them all, and then you bring it all in to a melting pot and you go - it's six.

: The number at the bottom is ...

Real Estate 1: And that almost gets too hard to understand.

Academic 1: So the number at the bottom is really not necessary.

Real Estate 1: I think the number in any given element is only going to be relevant to possibly two or three things. The first one is what is it you were trying to get in the first place? And if you didn't know what you were going to get, what was it like the last time? And is that what you expected? What do you know about your environment and the world in which you live that's changed it and has it changed for good or changed for bad? And then you could start thinking about well what does that mean?

Academic 1: So it's all relative.

Real Estate 1: And then it becomes a tool. So to me I think that's the point - this is absolutely relative and the danger is if you start saying to someone, "Could you lay open your soul?" and they go, "Energex got 3.75 and I'm Origin. Do I get - let's cheat a bit and I'll get to 3.77." Because that's what happen as soon as you put a number to it as opposed to looking at something and saying, "Well, what does that mean to me?" And I think Corporate manager 1's absolutely right, that you could get quite a challenging position when you then say it's not about a building or energy but about a whole bunch of things and the people within it.

Project manager 1: I wonder if again if you coupled some and it might be a list of questions or something that says how do we assess a list of questions of what your business wants, what outcome do you need? What do you see as being beneficial? If you had - because if you do one is about what is the building's score and what's the spider graph for it. But the other one is the set of questions and then to try and counter what you were talking about there if the measure - if you ever do boil it down to a number, that number should be about the match of needs and outcomes because then it would be valid to say I want a better match than someone else. Well that would still be a good behaviour; that would still drive a good behaviour that said, "My building - Origin's building is completely different to Energex's building. However, both match their own businesses and where they're trying to drive them really well. That would be a good outcome.

Real Estate 1: Absolutely.

Academic 1: So it'd be like interpreting a baseline to whether you exceeded or fell short of the baseline, so you could be like plus 20% or minus 15% on a particular issue. Is that what you're saying?

Project manager 1: Yeah, so one is in the conversation you have with the developer and the builder and whatever else. So if I'm now - I'm going into the building. Yes, that would be a valuable conversation to have and it might help the architecture team to be able to get you to quantify what you really want in a range of different - and then it may allow you at the end to be able to add some period of labour. You have to assess did we get what we thought we were getting. But it would also help you over time. 10 years down the track as the needs of your workforce have changed, it might even guide you if you can almost re-run than survey, whatever tool you use to measure what your needs are. That may help guide the ongoing investment in the building as well as to where should you place those.

Real Estate 1: I think...

: I'm sure people do this intuitively anyway.

Real Estate 1: Well, yes, but I think if you look at most businesses who get to the end of a life within a building and then are faced with the question of "Where are we going to do our business for the next 10-15 years?", I don't know. I think some

intuition comes into it but there isn't a great deal of science and ultimately that's the point, I think, is that if you want to make better cities, you've got to induce people to make more investment and to take some risk and how do you measure that, because unless you can find some sort of tangible measure to it, people won't want to make that step - it's too big a step. It's easier just to do the things you always do because you know what that means. I think by way of saying, "Look, does the business fit?" one of the interesting things is and I'm an engineer for my sins so we're the worst people in the world, but it's a bit like NABERS, where they say NABERS - this building is 4.5 stars. Isn't that fantastic? It's now hit the right number. Well, what is it capable of being? With the engineer talking, let's just wind it back. Was it the engineer who was working for the developer who was working to a price and had to deliver 4.5, so did lots of other things just to cover his backside because he didn't really want to get sued? So it was always capable of being 5. So 4.5 is actually is not doing as well as it could have been. Is it capable of doing 6, because someone puts a lot of investment in time and education and the building's really used incredibly well? That's worth a plus. How do you know? To me, a lot of the things we design, because it's so inherently built off of empirical data and other factors, the only real way to do it is to set yourself your goal, find out what it's then doing and then work out where you can take it. That is the true measure of being a really good corporate citizen, is taking something not to where it could have been or was under-over desigAcademic 3 to get to a pretty average anyway, taking something and taking it to its extreme. Is it [unclear]. It's great to jump up and say "We've collected 20 tons - we diverted 20 tons of waste. Aren't we fantastic?" Maybe you threw out 97 tons because you're not very good at diverting waste, so where's your starting point? And what's the effort? You might be able to get 60 easily but 30 takes an inordinate amount of corporate responsibility. But that's the stuff I think that we work out within a business recognised and some businesses would be able to do it and some wouldn't, you know.

Researcher: I am conscious of the time and everything and I am very appreciative of you giving up your time today. But just before we wrap up I was just wondering if there was anything anyone really wanted to add that hasn't been able to do so yet? We could finish in a few minutes then.

Architect 1: One comment I'd like to make. I think the output for government could include some kind of policy validation step, because to equate it to competitive advantage I think misses things like equity, responsibility, and an obligation to protect the environment.

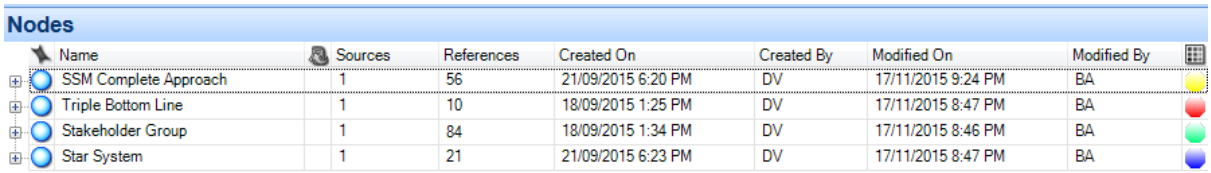
(all talk at once)

Researcher: And for those who came because I was pleading, thank you very much for helping us out. I really appreciate it. Have a safe journey home.

APPENDIX 4:

NVivo

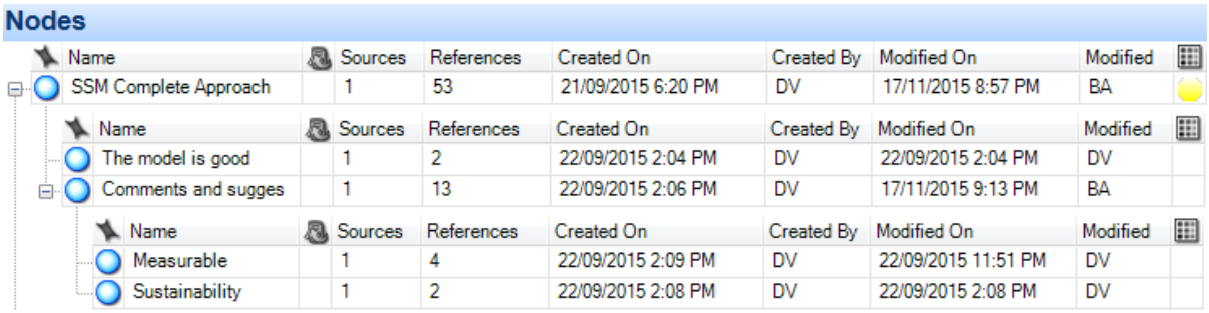
1. The four main nodes



Nodes

Name	Sources	References	Created On	Created By	Modified On	Modified By
SSM Complete Approach	1	56	21/09/2015 6:20 PM	DV	17/11/2015 9:24 PM	BA
Triple Bottom Line	1	10	18/09/2015 1:25 PM	DV	17/11/2015 8:47 PM	BA
Stakeholder Group	1	84	18/09/2015 1:34 PM	DV	17/11/2015 8:46 PM	BA
Star System	1	21	21/09/2015 6:23 PM	DV	17/11/2015 8:47 PM	BA

1.1 SSM Complete Approach Sub Nodes



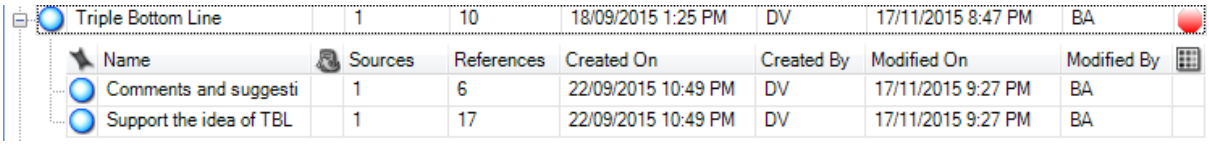
Nodes

Name	Sources	References	Created On	Created By	Modified On	Modified
SSM Complete Approach	1	53	21/09/2015 6:20 PM	DV	17/11/2015 8:57 PM	BA

Name	Sources	References	Created On	Created By	Modified On	Modified
The model is good	1	2	22/09/2015 2:04 PM	DV	22/09/2015 2:04 PM	DV
Comments and sugges	1	13	22/09/2015 2:06 PM	DV	17/11/2015 9:13 PM	BA

Name	Sources	References	Created On	Created By	Modified On	Modified
Measurable	1	4	22/09/2015 2:09 PM	DV	22/09/2015 11:51 PM	DV
Sustainability	1	2	22/09/2015 2:08 PM	DV	22/09/2015 2:08 PM	DV

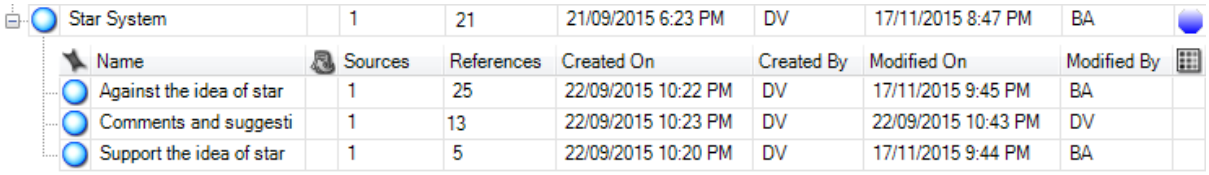
1.2 TBL Sub Nodes



Triple Bottom Line	1	10	18/09/2015 1:25 PM	DV	17/11/2015 8:47 PM	BA

Name	Sources	References	Created On	Created By	Modified On	Modified By
Comments and suggesti	1	6	22/09/2015 10:49 PM	DV	17/11/2015 9:27 PM	BA
Support the idea of TBL	1	17	22/09/2015 10:49 PM	DV	17/11/2015 9:27 PM	BA

1.3 Star System Sub Nodes

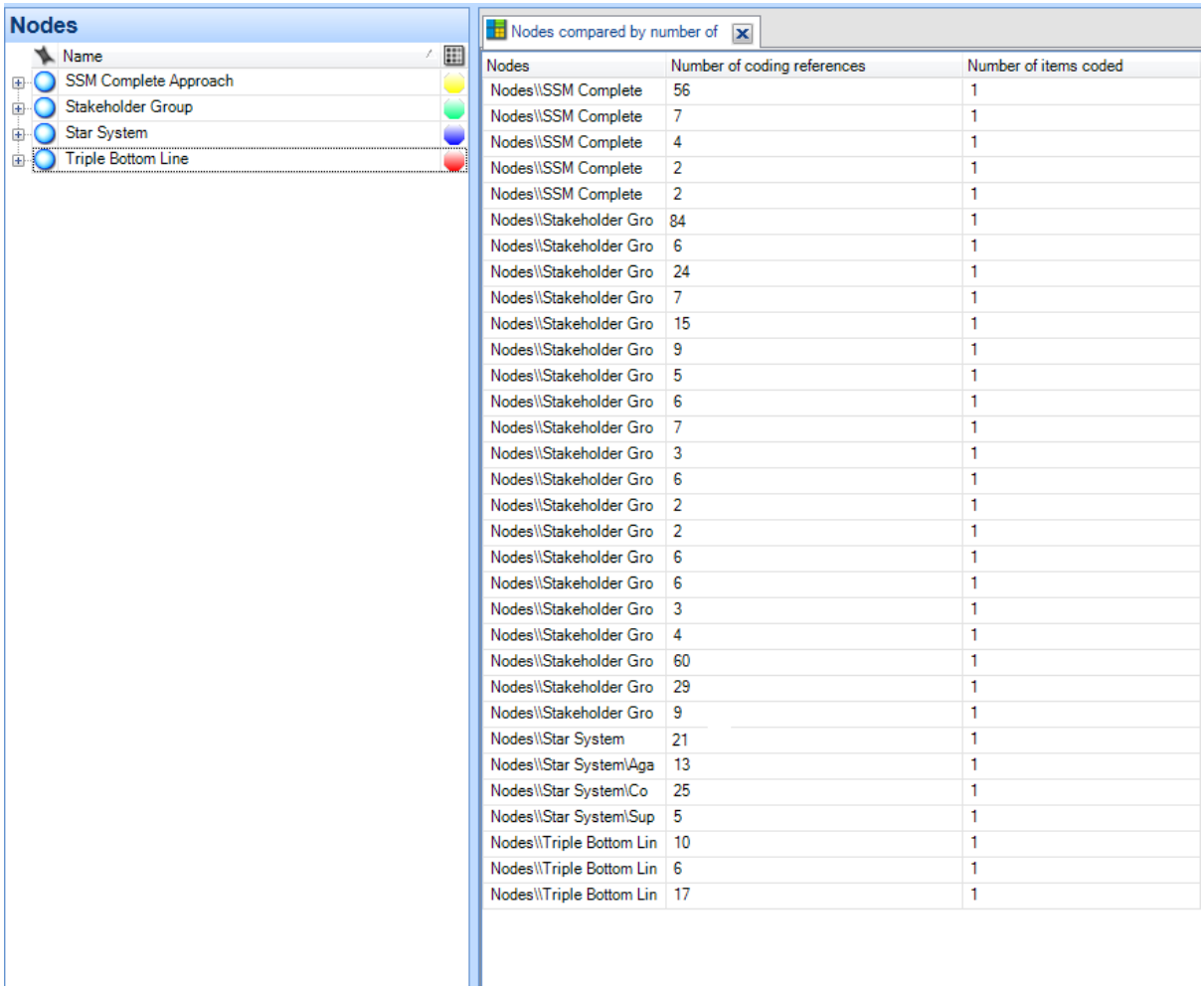


Star System		1	21	21/09/2015 6:23 PM	DV	17/11/2015 8:47 PM	BA
Name	Sources	References	Created On	Created By	Modified On	Modified By	
Against the idea of star		1	25	22/09/2015 10:22 PM	DV	17/11/2015 9:45 PM	BA
Comments and suggesti		1	13	22/09/2015 10:23 PM	DV	22/09/2015 10:43 PM	DV
Support the idea of star		1	5	22/09/2015 10:20 PM	DV	17/11/2015 9:44 PM	BA

1.4 Stakeholder Group Sub Nodes

Stakeholder Group		1	84	18/09/2015 1:34 PM	DV	17/11/2015 8:46 PM	BA
Name	Sources	References	Created On	Created By	Modified On	Modified By	
Comments and suggesti		1	6	22/09/2015 11:28 PM	DV	22/09/2015 11:37 PM	DV
Community		1	24	21/09/2015 6:32 PM	DV	17/11/2015 9:28 PM	BA
Name	Sources	References	Created On	Created By	Modified On	Modified By	
Comments and sug		1	7	22/09/2015 11:16 PM	DV	17/11/2015 9:28 PM	BA
Measurable		1	15	22/09/2015 11:15 PM	DV	17/11/2015 9:27 PM	BA
Name	Sources	References	Created On	Created By	Modified On	Modified By	
Company		1	9	21/09/2015 6:32 PM	DV	17/11/2015 9:29 PM	BA
Name	Sources	References	Created On	Created By	Modified On	Modified By	
Comments and sug		1	5	22/09/2015 11:16 PM	DV	17/11/2015 9:29 PM	BA
Measurable		1	6	22/09/2015 11:15 PM	DV	17/11/2015 9:29 PM	BA
Name	Sources	References	Created On	Created By	Modified On	Modified By	
Customers		1	7	21/09/2015 6:32 PM	DV	17/11/2015 9:30 PM	BA
Name	Sources	References	Created On	Created By	Modified On	Modified By	
Comments and sug		1	3	22/09/2015 11:16 PM	DV	17/11/2015 9:30 PM	BA
Measurable		1	6	22/09/2015 11:15 PM	DV	17/11/2015 9:30 PM	BA
Name	Sources	References	Created On	Created By	Modified On	Modified By	
Environment		1	2	21/09/2015 6:33 PM	DV	17/11/2015 9:31 PM	BA
Name	Sources	References	Created On	Created By	Modified On	Modified By	
Comments and sug		1	2	22/09/2015 11:16 PM	DV	17/11/2015 9:31 PM	BA
Measurable		1	6	22/09/2015 11:15 PM	DV	17/11/2015 9:31 PM	BA
Name	Sources	References	Created On	Created By	Modified On	Modified By	
Government		1	6	21/09/2015 6:33 PM	DV	17/11/2015 9:31 PM	BA
Name	Sources	References	Created On	Created By	Modified On	Modified By	
Comments and sug		1	3	22/09/2015 11:16 PM	DV	17/11/2015 9:31 PM	BA
Measurable		1	4	22/09/2015 11:15 PM	DV	17/11/2015 9:31 PM	BA
Name	Sources	References	Created On	Created By	Modified On	Modified By	
Staff		1	60	21/09/2015 6:32 PM	DV	17/11/2015 9:32 PM	BA
Name	Sources	References	Created On	Created By	Modified On	Modified By	
Comments and sug		1	29	22/09/2015 11:16 PM	DV	17/11/2015 9:32 PM	BA
Measurable		1	9	22/09/2015 11:15 PM	DV	17/11/2015 9:32 PM	BA

2. Nodes Compared By Number Of Coded



Nodes	Number of coding references	Number of items coded
Nodes\\SSM Complete	56	1
Nodes\\SSM Complete	7	1
Nodes\\SSM Complete	4	1
Nodes\\SSM Complete	2	1
Nodes\\SSM Complete	2	1
Nodes\\Stakeholder Gro	84	1
Nodes\\Stakeholder Gro	6	1
Nodes\\Stakeholder Gro	24	1
Nodes\\Stakeholder Gro	7	1
Nodes\\Stakeholder Gro	15	1
Nodes\\Stakeholder Gro	9	1
Nodes\\Stakeholder Gro	5	1
Nodes\\Stakeholder Gro	6	1
Nodes\\Stakeholder Gro	7	1
Nodes\\Stakeholder Gro	3	1
Nodes\\Stakeholder Gro	6	1
Nodes\\Stakeholder Gro	2	1
Nodes\\Stakeholder Gro	2	1
Nodes\\Stakeholder Gro	6	1
Nodes\\Stakeholder Gro	6	1
Nodes\\Stakeholder Gro	3	1
Nodes\\Stakeholder Gro	4	1
Nodes\\Stakeholder Gro	60	1
Nodes\\Stakeholder Gro	29	1
Nodes\\Stakeholder Gro	9	1
Nodes\\Star System	21	1
Nodes\\Star System\Aga	13	1
Nodes\\Star System\Co	25	1
Nodes\\Star System\Sup	5	1
Nodes\\Triple Bottom Lin	10	1
Nodes\\Triple Bottom Lin	6	1
Nodes\\Triple Bottom Lin	17	1

3. Nodes Compared By Number Of Coded (Tree Map)